

Indulgent Prostithenai | Ethical cacao-*poiesis* in the Old Castle Brewery, Woodstock

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Indulgent Prostithenai:

Ethical cacao-*poiesis* in the Old Castle Brewery, Woodstock.

Woodstock, Cape Town.

MArch (Prof)

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This dissertation is submitted in partial fulfillment of the requirements for the Masters Degree in Architecture. All the work contained in this document is my own except where otherwise acknowledged.

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The work contained in this dissertation has not been previously submitted to meet requirements for an award at this or any other institution of higher education. To the best of my knowledge, this dissertation contains no material previously published or written by another person except where due reference is made.

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Abstract

Indulgent Prostithenai: Ethical cacao-*poiesis* refers to the ethically indulgent nature of a prosthetic architectural approach that introduces a chocolate factory that inspires the adaptive reuse of a historic building in Woodstock, Cape Town. It further refers to the investigation of the insights embedded in a venturesome architectural prosthetic to inspire radical urban renewal and reconnect the isolated site to the larger creative and diverse urban environment while preserving the contextual meaning of the historic building. The historic building in question, namely the Old Castle Brewery complex, is currently utilised as corporate rentable space. It is proposed that a more venturesome program, namely a chocolateria, will more readily be able to reintegrate the isolated location into the urban fabric of Woodstock comprising culinary and creative activities and functions. This approach encompasses the investigation of indulgence in cacao-*poiesis*, or chocolate-making, architecture and the 1964 novel by Roald Dahl, *Charlie, and the Chocolate Factory*. Thereby combining its findings with the principles of an Epicurean methodology to develop a contextual definition of ethical indulgence. It further explores ethics within an Epicurean approach, as three layers that lead to the development of radical urban renewal and venturesome prosthetics as derived from its medical origins. Ethical indulgence remains central to these explorations. Through investigating the negative associations attributed to indulgence and the possibilities of typological reinventions, moralised hedonism is questioned to revert indulgence to its humanitarian geneses. The amalgamation of the abovementioned concepts, investigations and explorations delivered the research question:

How can the embedded wisdom of cacao-*poiesis*, coupled with the creative sensibilities of ethical indulgence, inspire an architecture of radical urban renewal, historically sensitive adaptive reuse, and prosthetic venturesomeness in a historic industrial building in Woodstock, Cape Town?

Preface

The research presented was inspired by my main creative trigger, Roald Dahl's *Charlie, and the Chocolate Factory* (1964), and the recent film adaptation (Burton, 2005), starring Johnny Depp as Willy Wonka joined with my lifelong love of chocolate. Chocolate has always been the poster child for indulgence. Complex in flavour, aroma and appearance, chocolate is one of the most common and accessible forms of indulgence, allowing an individual to transcend reality, if only for a moment. In Tim Burton's *Charlie, and the Chocolate Factory* (2005), Willy Wonka transcends the conventional rules of reality, challenging norms and standards for what chocolate can be. He refuses to be limited by what is expected from a chocolate factory, indulging in any whim and inclination to create chocolate and sweets never seen before.

Willy Wonka questions the rules of indulgence. Following his inspiration blindly to create a new identity, not only for chocolate but for chocolate factories. As the story progresses, Wonka also questions himself. His character, sense of ethics and compassion are confronted, and he is forced to grow within himself or be left behind. He chooses to allow five lucky children into his fantasy. Arrogantly leading each into a trap, until one, Charlie Bucket remains. Charlie, chosen by Wonka as heir to his empire, must create a new identity for the chocolate factory.

Wonka's journey can be seen as an inspiration for reimaging an existing legacy. Inspiring one to follow the path of indulgence, challenging what is to be expected, and dreaming of a reality beyond what conventional rules dictate. Thus having your cake and eating it too. What happens when this visionary kind of indulgent thinking is applied to architectural heritage preservation and urban development?

"We are the music makers and we are the dreamers of the dreams."
(Dahl, 1964: online).



01

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1.1 Introduction

"Welcome, my little friends. Welcome to my chocolate factory" (Dahl, 1964: 71), the first words from Willy Wonka in the 1964 novel *Charlie and the Chocolate Factory* by Roald Dahl. Wonka invites the five lucky Golden Ticket holders into the allure of his chocolate factory with the promise of indulgence.

Indulgence remains synonymous with chocolate, as the promise of happiness and positive experiential outcomes. Yet the word is often met with negative subtexts. Greed and intemperance are often attributed to indulgence, as societies moralise hedonism and expect justification for indulgent actions, in turn questioning ethics. This suggests that by incorporating ethics into the indulgence of delight, one can remove the negative connotations attributed to the enjoyment of decadence.

Epicurus, a Hellenistic period philosopher, suggests that the object of ethics remains to determine an outcome and develop the means to achieve it. He further states that the aim is not without introspection and the search for pleasure without pain or fear. Nevertheless, the musings of Epicurus became known as Epicurean, describing a person devoted to the enjoyment of sensual pleasures derived from food and drink (Macmillan Dictionary, 2022: online). The overlap of indulgence and ethics reverts indulgence to its variable, defined as the treatment of something with special kindness. Which petitions for chocolate and cacao-*poiesis* to be considered an extraordinary kindness allowing oneself to indulge in delight and decadence. Similarly, the adaptive reuse of historic buildings can be considered a special kindness, by reusing existing features and providing an addition where necessary without causing harm or detrimental effects on its cultural and historical significance. Historic buildings are often not eligible for drastic alterations, compelling such buildings to become a host to additions or extensions. Habitually, as derived from human anatomy, extensions to the host become a prosthetic that aims to support and supplement its wearer. However, prosthetics do not have to be limited to mimicry.

This thesis investigates how the embedded wisdom of chocolate-making, coupled with the sensibilities of ethical indulgence, can inspire historically sensitive adaptive reuse and radical urban renewal of a historic building in Woodstock, Cape Town. Additionally, utilising the insights embedded in a venturesome, prosthetic architectural approach to reconnect the isolated site to the larger creative and diverse urban environment while preserving the contextual meaning of the historic building.



Fig 1: Photocollage of Willy Wonka, his visitors and his factory, with Augustus Gloop in a floating bubble (Author).

1.2 Creative triggers

1.2.1 *Charlie and the Chocolate Factory*

The initial muse for research was sparked by the 2005 rendition of Charlie and the Chocolate Factory, directed by Tim Burton, starring Johnny Depp as Willy Wonka. The story follows a poor but good-hearted boy, Charlie Bucket, who lives with his family in a tiny home within the village where Willy Wonka's chocolate factory is based (Bergery, 2005: online). Wonka, isolated and without a family, launches a lucky draw competition to invite five fortunate children into his chocolate empire with the intent of choosing an heir. Golden tickets are randomly placed in five chocolate bars to be sent worldwide. The five lucky children, Charlie Bucket, included, find their way to Wonka's factory, guided by a parent or grandparent (Bergery, 2005: online). The story recounts Wonka providing his visitors with a mind-boggling tour of his factory, for which nobody has seen the interior in nearly 15 years (Bergery, 2005: online). Visualising the indulgence in fantasy and imagination, the film showcases Wonka's chocolate endeavours, joined in song by the Oompa Loompas, Wonka's cacao-loving employees.

The 2005 film showcases Tim Burton, the director, and Alex McDowell, the film production designer's visual vision for the interior of Wonka's factory (Bergery, 2005: online). Challenging the conformist design conventions for chocolate factories and visualising the phantasmagoria that is Willy Wonka's imagination. Chocolate waterfalls and rivers, edible grass, candy trees, experimentation and invention rooms, nut rooms filled with squirrels and a tv room that allows chocolate to be delivered through one's television. Although only a few functions of Wonka's factory are highlighted in the film, it creates a grand sense of Willy Wonka's refusal to give in to the conventional. He challenges the limits of his imagination to develop large volumed interior spaces dripping with decadence and indulgence to every whim and inclination. Wonka's indulgence in architectural fantasy, combined with the pleasure of chocolate, showcases a combination of fantastical hysteria and transcendence.

Wonka served as the initial spark of indulgence. Connecting chocolate and architecture through indulgence, by challenging established conventions and, in the end, letting a visionary influence create a new identity for an existing legacy.

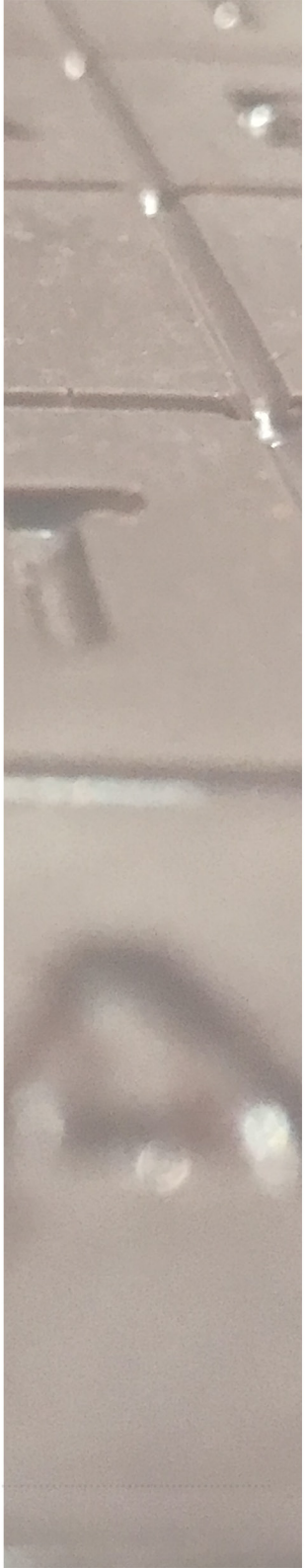


Fig 2: Close up photograph of an HONEST chocolate bar (Author).

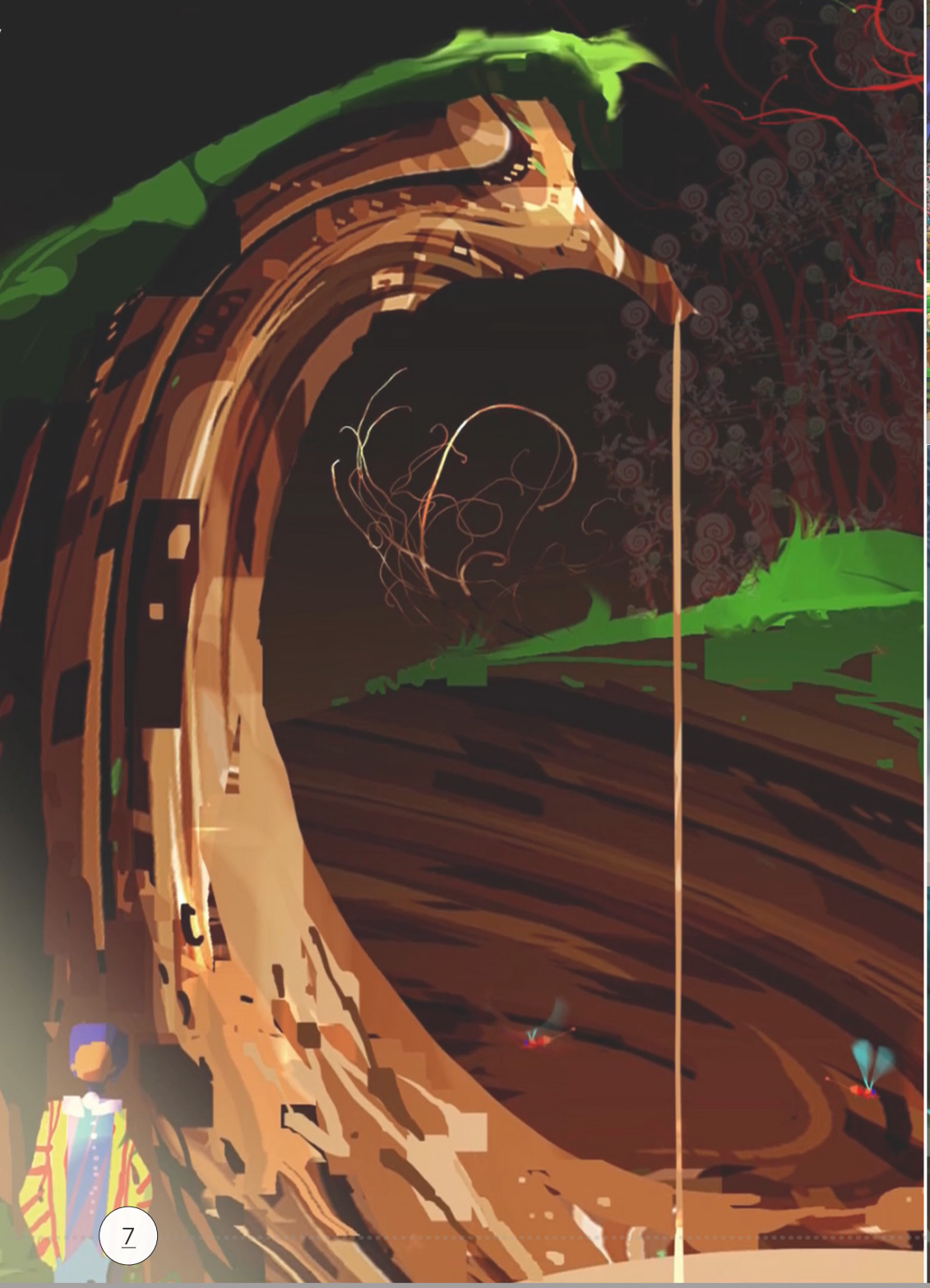


Fig 3: Illustrations by Tim Burton of key scenes (Experiential design, 2022: online).



Fig 4: chocolate landscape (Experiential design, 2022: online).

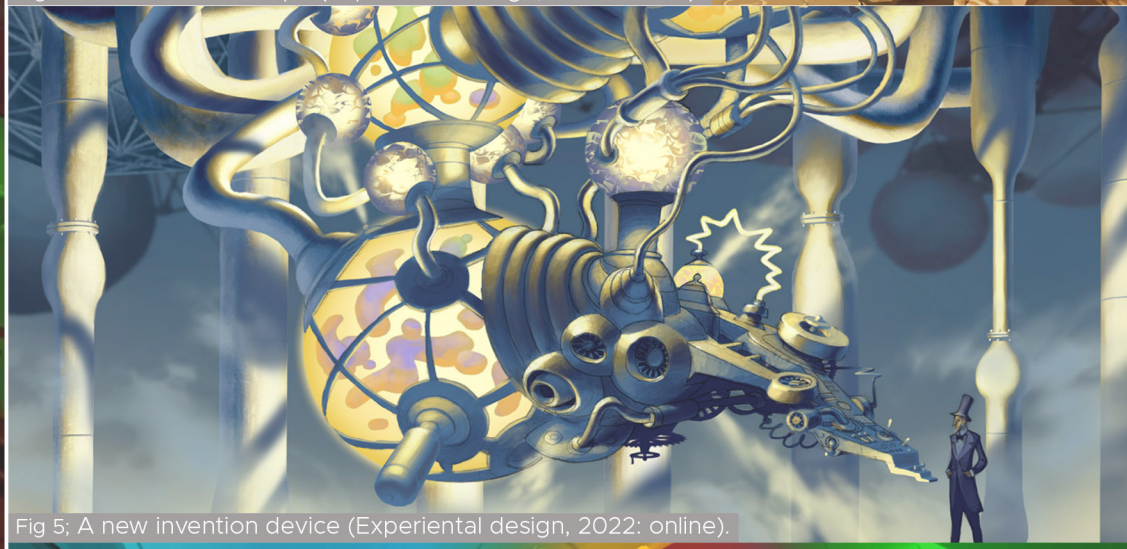


Fig 5; A new invention device (Experiential design, 2022: online).

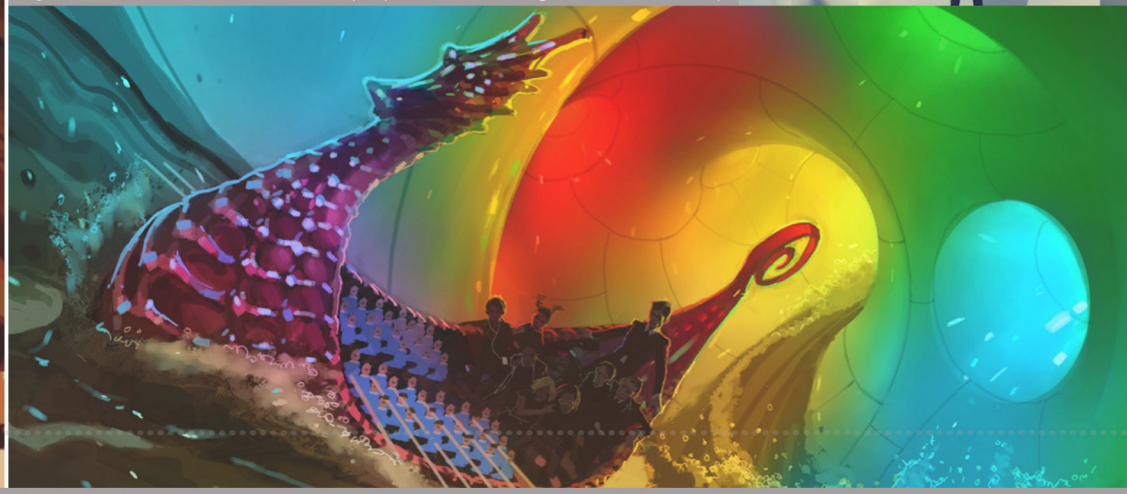


Fig 6: Seahorse boat on a chocolate river (Experiential design, 2022: online).

1.2.2 HONEST chocolate

Willy Wonka illustrates what can be possible with chocolate if the treat is combined with a bit of imagination—delighting visitors with the molten, thick chocolate decadence mixed moments ago by a waterfall that merges into a chocolate river utilised to traverse the factory. Wonka explains that the origins of the chocolate within the river are attributable to his loyal employees, the Oompa Loompa's. From whom he exchanged life in his factory with an abundance of cacao beans, for their knowledge in the preparation and utilisation of cacao beans to create chocolate.

However, in reality, the decadent indulgence known and loved originated in a very different form. The origins of chocolate can be traced back to the ancient Olmecs, initially from Southern Mexico. The Olmecs consumed chocolate as a bitter and ceremonial drink (History, 2017: online). Hayes Lavis, a curator of cultural arts for the Smithsonian's Natural Museum of the American Indian, claims that the Olmecs were the initial founder of chocolate. He explains the discovery of ancient Olmec pots, dating back to 1500 B.C., that contained theobromine traces, a stimulant compound found in tea and chocolate (History, 2017: online). He believes that the Olmecs used cacao beans to create the chocolatey ceremonial drink; however, as there is no definite documentation regarding the creation of the bitter beverage, the Olmecs may have utilised the cacao pod in its entirely (History, 2017: online).

The Olmecs transferred their knowledge and use of cacao to the Central American Maya, who also utilised the bitter beverage in ceremonial celebrations and to finalise important transactions (History, 2017: online). Chocolate was not a sign of wealth or power but was a readily available commodity to the Mayan people. It is suggested that Mayan households enjoyed chocolate with almost every meal, as a thick, frothy beverage, usually mixed with other components such as honey, water and chilli peppers (History, 2017: online). Furthermore, chocolate was celebrated through ritual for its medicinal value (St Jean, 2020: online). Pre-Spanish Mayan people utilised chocolate for baptisms and marriage ceremonies (St Jean, 2020: online).

Where cacao beans were ground up and mixed with water and flowers to be rubbed on the hands, feet and faces of children being baptised (St Jean, 2020: online). Furthermore, chocolate has been documented in the Florentine Codex (1590 A.D.), a medicinal information record written by the Spanish priest Bernardino de Sahagun, stating the various medicinal uses of chocolate (St Jean, 2020: online). Benefits include the internal and external use of chocolate to relieve agitation, reduce asthma and angina, improve energy, provide a calming effect, reduce emaciation and fever, and the quenching of thirst (St Jean, 2020: online).

> *"[Green cacao] makes one drunk, takes effect on one, makes one dizzy, confuses one, makes one sick, deranges one. When an ordinary amount is drunk, it gladdens one, refreshes one, consoles one, invigorates one. Thus, it is said: 'I take cacao. I wet my lips. I refresh myself'*
>
> *(Sahagun 1590, 119-120).*
>
> *"Cacao aims at gently touching and opening up the emotional center of our body - our heart chakra. The medicine works specifically by bringing us back to the feeling of love, oneness and connection. We turn into our true and authentic selves, and are able to listen deep within to the deepest callings of our heart"*
>
> *(Malzer, 2022: online).*

Another story of origin dates to the Aztecs, who greatly admired chocolate, or xocoatl (History, 2017: online). The Aztecs believed that chocolate was a gift from the gods. They regarded cacao beans as significant signs of wealth, considering them worth more than gold. They used these beans as currency and consumed the chocolate as a caffeinated cold or hot spiced beverage (History, 2017: online). Chocolate was an extravagant indulgence, occasionally enjoyed at celebrations, particularly weddings (History, 2017: online).

The Theobroma traces found in the historic Olmec pots are native to Theobroma cacao trees (Chococlic, 2022: online). These cacao trees were initially cultivated by the Aztecs and Mayas in Central and South America and introduced to Western Africa through Spanish Settlers (Chococlic, 2022: online). Most cacao tree variations in Africa are of the Forestero variety, which produces especially bitter beans (Chococlic, 2022: online). This variety comprises up to 75% of worldwide cacao production (Chococlic, 2022: online).

Another variety that makes up roughly 20% of the world's cacao production is the Trinitario variety (Chococlic, 2022: online). Both types contribute to Africa's production of cacao, making the continent one of the largest cacao producers in the world (Chococlic, 2022: online). Famous chocolate houses, including Villars and Lindt Master Chocolatiers, source their cacao beans from Africa (Chococlic, 2022: online).

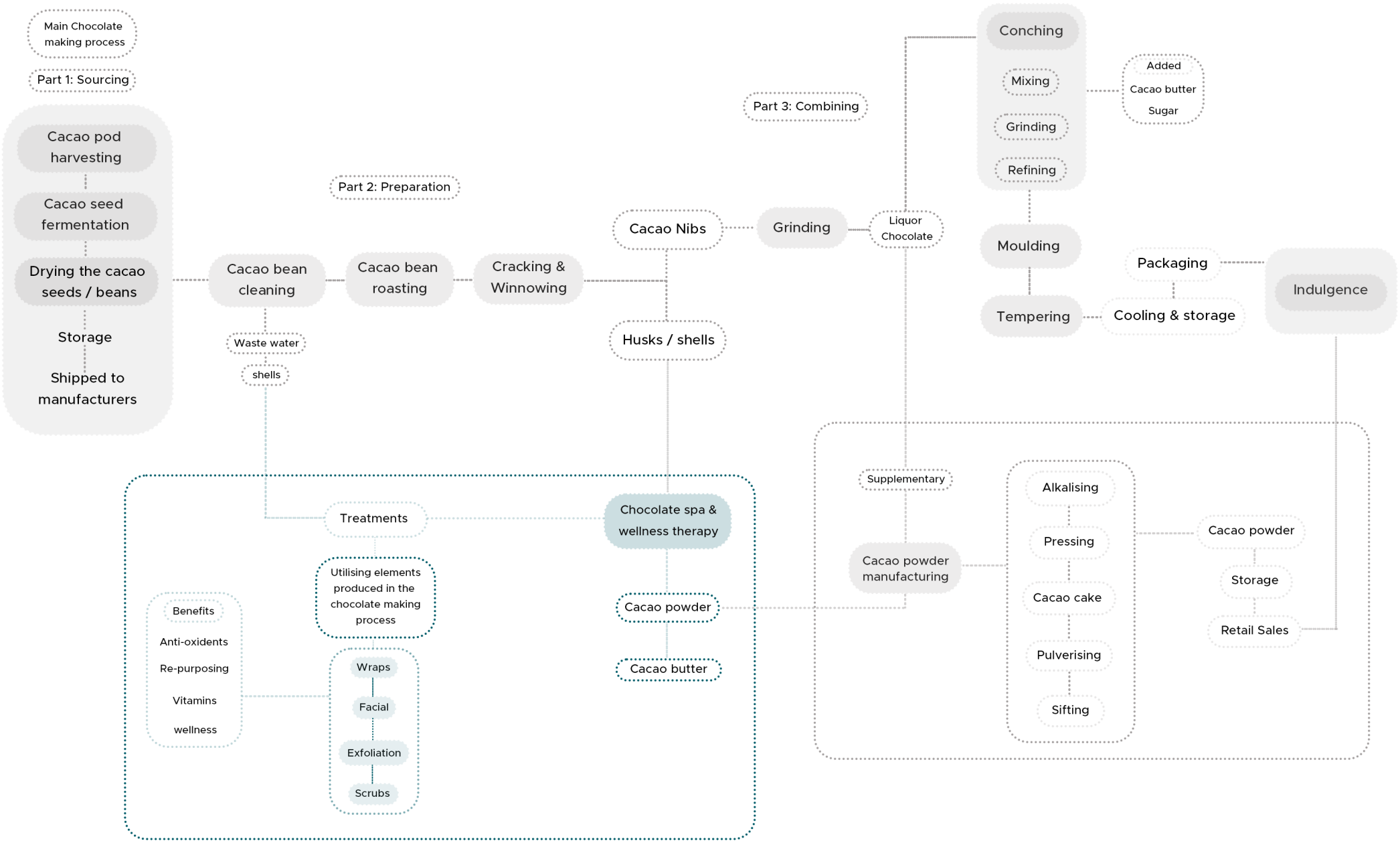
Honest Chocolate, an artisanal bean-to-bar chocolate producer based in Cape Town, believes in the making of thoughtful, ethically produced chocolate. That not only originates in Africa, Tanzania specifically, but can also be enjoyed locally. Honest Chocolate aims to create treats that may encompass the healing properties of chocolate that were once celebrated by the Mayan and Aztec people (St Jean, 2020: online).

HONEST
CHOCOLATE



Fig 7: Sketch of an ancient statue representing the significance of cacao (Author).

Chocolate making process: Flow diagrams & processes



Part 1: Sourcing

Cacao pod harvesting

Cacao pods are manually harvested from Cacao trees (typically Theobioma Cacao). Pods turn from green to orange once ripe. Once collected, pods are split open to remove the cacao seeds/ beans. Each pod contains +/- 50 seeds.

Cacao seed fermentation

Heated by the sun, placed in shallow heated trays or covered with banana leaves (dependant on country). Beans are periodically stirred to ferment equally. The process last 5-8 days turning beans brown.

Drying the cacao seeds / beans

Beans are dried before it can be packed, stored and shipped. Drying takes about a week. Beans/ seeds are placed on trays and left in the sun to dry. After the drying process, the beans are about half their original weight.

Storage

Shipped to manufacturers

Part 2: Preparation

Cacao bean cleaning

Cacao beans are passed through a machine that removes extraneous material such as dried cacao pulp and left over pieces of the pods. Other materials such as fibres, sand and dust are also removed to prepare the beans fro the next stage.

Cacao bean roasting

Beans are roasted to develop and bring out the characteristic chocolate aroma. Roasting ranges from 30min to 2 hours. Beans are roasted in rotatary roasters, allowing the moisture content to dop, the bean colour will change from brown to rich brown. Good roasting = good flavour. Under/lightly roasting = underdeveloped & bitter flavours. Over-roasting = loss of delicate flavours (burnt taste).

Cracking

Beans are roasted and cooled to be cracked. Beans pass through a mill that cracks them into smaller pieces. Becoming a mixture of cacao nibs and husks. The mix is passed through sized screens to prepare for winnowing.

Winnowing

This is the process of removing the husks from the nibs. The mixture is passed through a machine that blows air through the mixture (winnower). The lighter husks is blown out of the mix, separating the nibs and husks.

Part 3: Combining

Grinding

Cacao nibs are grinded into a cacao liquor or cacao mass. The grinding process generates heat, transforming the dry granular consistency of the cacao nibs into a liquid as the fat melts. In this process, cacao butter and sugar is added to the mix.

Conching

This process is the development of chocolate on a molecular level. Solid particles (cacao and sugar) is encapsulated in cacao butter - this contributes to the chocolates' smoothness. In this process, the general smoothing and evening of flavour is developed. Volatile chemicals evaporate during this process.

Tempering

Tempering invloves the manipulation of temperature of liquid chocolate to affect the growth of the correct matrix of cacao butter crystals. Properly tempered chocolate bars will have a glossy shine and good snap. Poorly tempered bars are soft and will melt easily when held. This process involves the heating, cooling and re-heating of liquid chocolate while working with the mix.

Moulding

Tempered liquid chocolate is placed into moulds at the optimal temperature. Liquid chocolate solidifies in the mould in a cool environment to allow crystallization to occur and the liquid chocolate to harden. Once the chocolate sets - it will be easily removed from the moulds.

Cooling & storing

Packaging

1.2.3 Problem statement

Historically, chocolate was utilised as a social component between people. It connected and united them in celebration and interaction, becoming the catalyst for engagement. Chocolate, as an indulgence, can also be the catalyst of interest in a peripheral industrial site. The integration of chocolate within a historic complex situated within an industrial zone on the edge of a vibrant neighbourhood ignites a public interest than was previously overlooked. Peripheral sites, similar to the Old Castle Brewery, can become isolated from general use, especially in an industrial setting. However, these industrial islands can become a beacon of public interaction within their peripheral locale.

The context of a periphery should be defined to understand the expression of peripheral sites in a specific industrial setting. Dietmar Steiner, an architect, defines peripheries as locations of the everyday which are not necessarily subject to urban embellishment and attention, continuing that it remains an in-between state, a non-location district that persists in motion between new islands and old centres (Lapunzina, 1995: 318). Alejandro Lapunzina, an architect, explores the statements on peripheries by Dietmar Steiner and Rem Koolhaas. He states that, as Koolhaas explains, peripheries are not always referent to the exact location of a building but can also signify a state of mind marginalized from prevalent urban architecture (Lapunzina, 1995: 318). Lapunzina further states that, in many ways, industrial peripheries have a negative imagining, despite their role in the experimental development of urban planning, which remains essential to city growth (Lapunzina, 1995: 318).

Peripheral sites are birthed through the expanding urbanisation of cities and neighbourhoods. As cities grow, public life becomes centred within a development, driving industries to the edges of their civilisation. These industries creates an industrial periphery around more vibrant and thriving neighbourhoods. Within this periphery, the general architectural occurrence is factories, production warehouses and administrative compounds.

Usually, these complexes are isolated from the public to serve a specific function, rightfully becoming an island within an industrial periphery. However, as time progresses, vibrant neighbourhoods, once developing away from industrial islands, may be forced to evolve towards it. They are bordering on peripheral islands and reigniting interest in using industrial-styled buildings for contemporary use, and is generally subject to adaptive reuse.

Adaptive reuse aims to provide a new function to an existing building or complex, extending the life of a building originally built for a different function and program. Adaptive reuse is generally considered successful ethically and economically, as reintegrating old and new has a reduced environmental impact than constructing a completely new building. However, the success of adaptive reuse remains dependent on the appropriateness of integrating old and new, evolving an existing building to become a part of a contemporary urban fabric. Adaptive reuse remains appealing to developers as it offers an already developed building to be restored or extended, presenting a significantly lower financial contribution for investors. Financial consideration and urban renewal opportunities customarily convince developers to invest in industrial islands. However, they remain focused on the value of the project, opting for projects that offer the highest value outcome and lowest input contribution. This approach may lead to inappropriate adaptive reuse strategies focusing energy on rapidly introducing contemporary functions insensitively adjoined to the existing urban fabric. Furthermore, indifferent reuse strategies allow existing buildings to be damaged in the process of 'rehabilitation', disregarding important characteristics that form a part of the urban identity to maximise the use of the existing. Insensitive strategies allow historical memory and identity to be lost through the forceful integration of old and new.

Therefore, it is essential to consider an existing building as a place of shared memory, identity, and history, allowing adaptive reuse to indulge in the allure of contemporary design while providing a framework for its application. In this regard, adaptive reuse should be considered with ethics and sensitivity when applied to urban renewal strategies. Venturesome additions, like prosthetic architecture, can be applied to existing industrial sites to explore a new program through the ethical indulgence of adaptive reuse. A radical new program transforms the existing interior function, while venturesome prosthetics may radically transform the exterior urban impression of the industrial site. Providing an opportunity for radical urban renewal through ethically indulgent, venturesome, and yet sensitive adaptive reuse strategies to peripheral industrial islands.

The Old Castle Brewery Building is an industrial island on the periphery of the vibrant neighbourhood of Woodstock. Located within an industrial setting between large-scale production companies and the railway, the complex is isolated from the public, limiting the use of the building. However, that has not yet hindered intrigued individuals from becoming a part of the building's identity. As Woodstock is evolving, more interest is shown towards the historic island and its capacity to house a variety of occupants. What once was a beer brewing facility has grown into a collection of occupants accommodating a variety of functions. The building's capacity for change and castle-like, fantastical exterior was captivating. As a beacon within the industrial periphery of Woodstock, the complex draws one in, sparking intrigue and hope for investigation. Significantly different to its surroundings, the building asks to be seen, to be investigated and to be understood. At first glance, the building felt like it could be the home to Willy Wonka and his chocolate factory. The site was chosen intuitively, rather than based on rationale. One could feel the wonder, the mystery and the opportunities waiting to be discovered. Similarly, the research question opens possibilities and allows one to wonder—albeit with the aim of practical and feasible intervention.

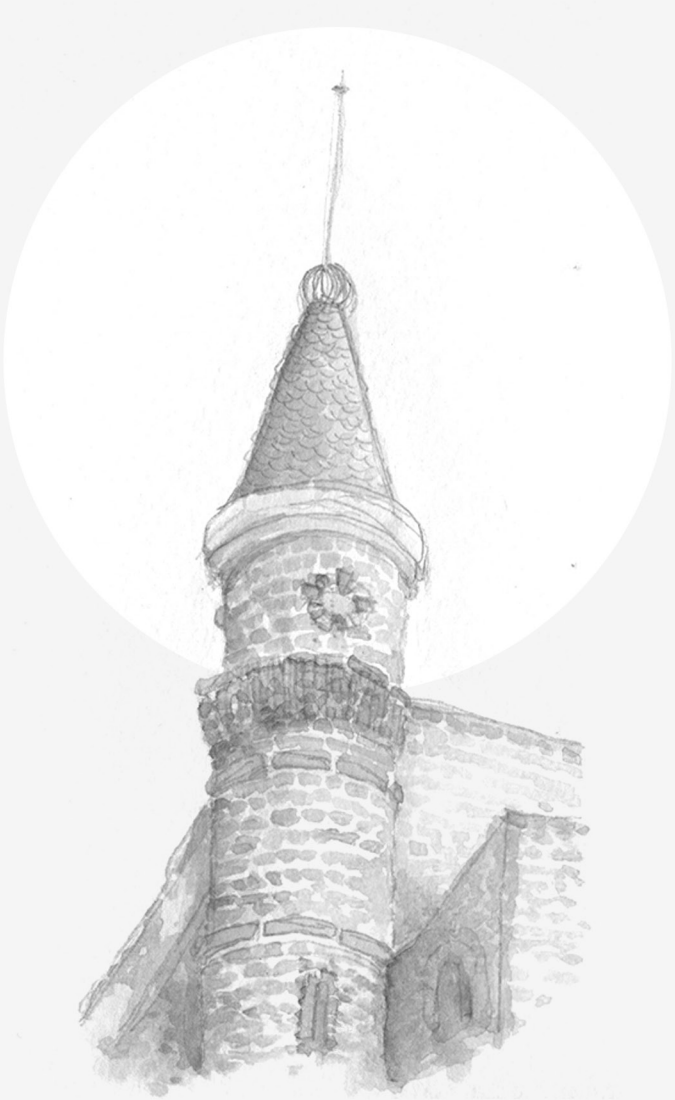


Fig 8: Sketch of the Old Castle Brewery Tower (Author).

1.3 Research Question

RQ: How can the embedded wisdom of cacao-poiesis, coupled with the creative sensibilities of ethical indulgence, inspire an architecture of radical urban renewal, historically-sensitive adaptive re-use and prosthetic venturesomeness in a historic industrial building in Woodstock, Cape Town?

RQ (defined):

How may:

- Cacao-poiesis: The ethical, thoughtful and revelatory process of chocolate making

- Radical urban renewal: The challenging of pre-imposed frameworks, with suggestions of radical interventions that could offer development, social upliftment, and circumstantial changes.

- Historically-sensitive adaptive reuse: An appropriate intervention at an already existing site, intending to preserve the historic or existing while creating a new identity independent from heritage through the questioning of implemented frameworks, processes, and the conventional use of the existing structures. In this case the the new program is 'returning the building to its industrial roots', but in a more indulgent format.

- Prosthetic architecture: Adding a supplementary structure opening the way for new kinds of urban engagement, to an existing host to allow for the venturesome extension of place.

- Ethical indulgence: The discipline of principles and values applied or implemented when yielding to desire or satisfying inclinations. In Architectural terms, offering a framework for urban gratification.

Explicated research question: How may the introduction of the ethical and thoughtful process of chocolate making, utilise the explorations of radical urban renewal to provide an appropriate intervention at an already existing site. With the intention to preserve the existing while creating a new independent identity, questioning implemented frameworks, and the addition of a supplementary structure to an existing host. A structure that promotes new kinds of urban engagement and allows for the venturesome extension of place. Introducing ethical indulgence to offer a framework for urban gratification as a preservation method, for an existing historic building in Woodstock, Cape Town, South Africa.

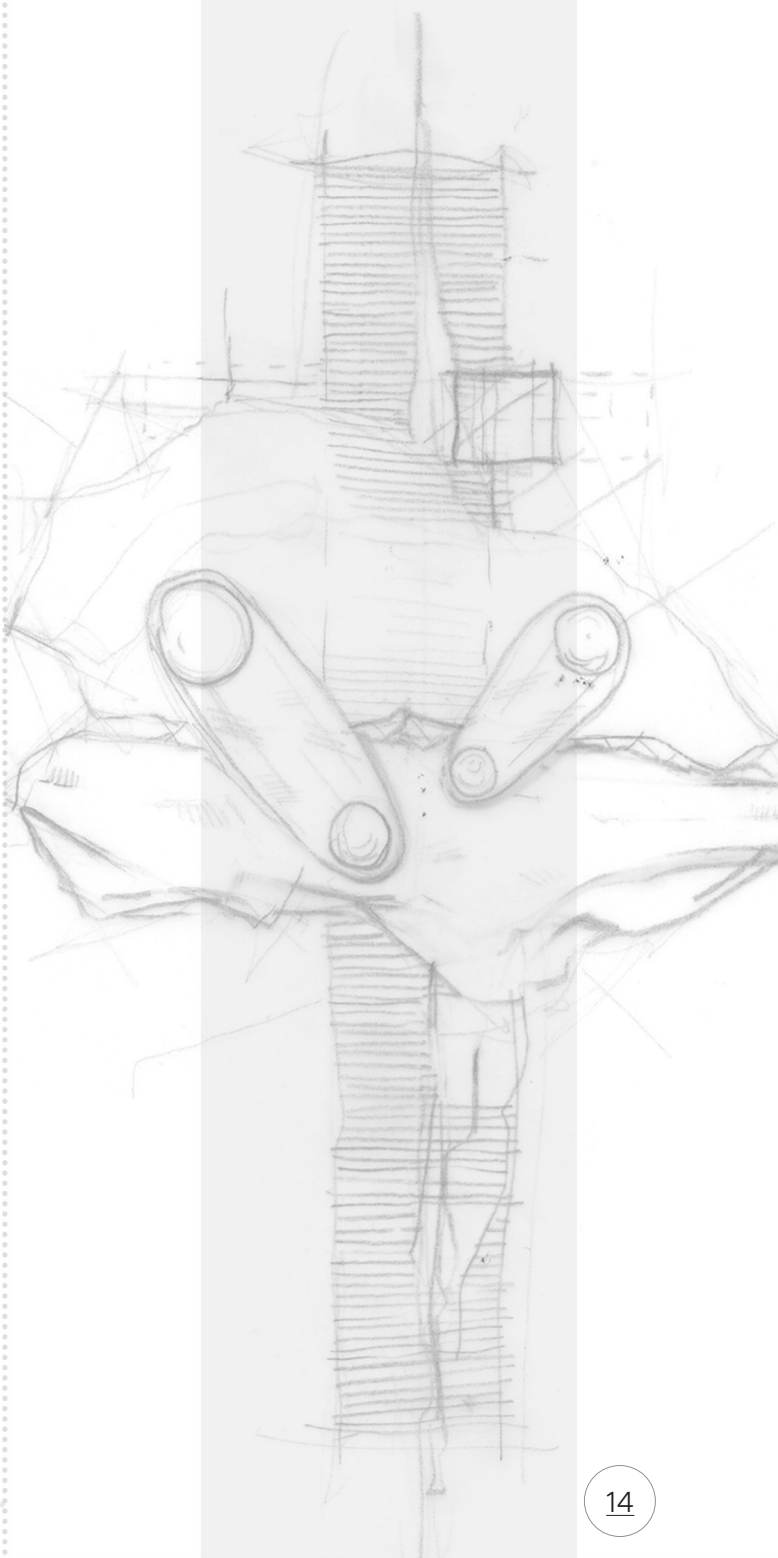


Fig 9: Abstraction of a prosthetic joining an existing massing (Author)

1.4 Conclusion

Chocolate is one of the most common forms of indulgence. Not only diverse in flavour, aroma or appearance but widely regarded as peoples' guilty pleasure when it comes to indulgence. *Charlie and the Chocolate Factory* provides the initial spark of imagination, within architecture and chocolate. Linking chocolate indulgence to architecture and the possibilities therein. As Willy Wonka demonstrates, there is more to chocolate in architecture than meets the eye. He investigates venturesome explorations that challenge the conventions of chocolate factories. He regards his only limitation as that of his imagination, and constantly questions what chocolate and sweets should and can look like.

Similarly, he challenges the bounds of architecture. Creating imaginative interior spaces to accommodate the indulgence of chocolate and his inspirations. Architecture should be questioned to develop new ideas. As Wonka pushes the boundaries of chocolate to create something new, one can implement his sense of questioning into the methodology of an architectural approach to create a new architectural identity.

The next chapter will set out the conceptual explorations as they progressed from the initial creative triggers into a more architectural approach. Exploring ideas for a touchstone, reflecting on its outcome and investigating three possible conceptual approaches within prosthetic architecture.



Fig 10-12: sketchs of cacao pods and a chain for positive chain of production (Author).

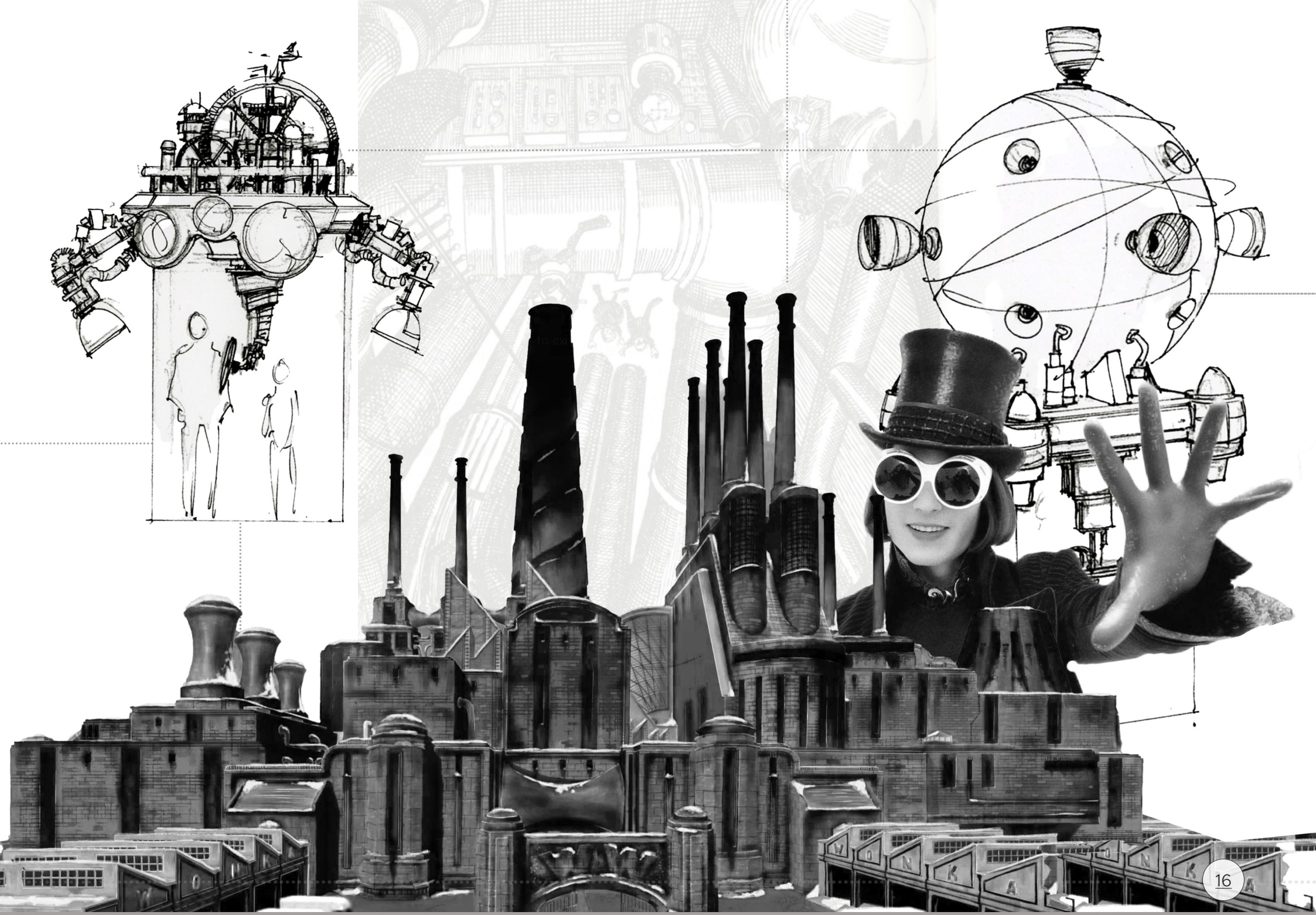


Fig 13: Photocollage depicting Willy Wonka, reaching out over his factory to engage the viewer (Author).

02

Conceptual Exploration

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Fig 14: Close up photograph of the touchstone (Author).

Introduction

The touchstone and three concepts were essential in the initial design development. Providing the opportunity to explore conceptual possibilities to widen the scope of what is possible in design. By taking the creative triggers into account, in conjunction with the research question, a touchstone can be developed to encompass the aspired intent of the research explorations.

2.1 Touchstone

The touchstone had to find ways to creatively bridge the assumed divide between chocolate and architecture. Proposing an attempt to embody the peripheral industrial site as an interactive object that could engage with chocolate in various creative explorations.

Old Castle Brewery is in an isolated position on the outskirts of Woodstock. While practical challenges mar the site, it is suggested that ethical indulgence may offer a way out of this constricted condition. By indulging in the fantasies of *Charlie and the Chocolate Factory*, the goal is not only to physically, but also mentally reintegrate the site by encouraging users to have an interactive and immersive experience. Individuals could experience the excitement of chocolate making while exploring the historical complex of the Old Castle Brewery. To become an indulgent destination where historic memory meets new identity by adding a supplementary structure.

Proposing a chocolateria within this historic site invites users to investigate and indulge in the mystery and art of chocolate making. Thereby not only bringing to fulfillment the visual romanticism of the historical revival styles evident in the building but also recalling the industrial roots of The Old Castle Brewery. Initially, the touchstone aimed to illustrate the coming together of components within Woodstock to create an integrated whole with an underlying chocolate network that provides an additional link between the members. Intending to encourage investigation and collaboration, the model requires at least two contributors to come together as activation or trigger for the components to coalesce.





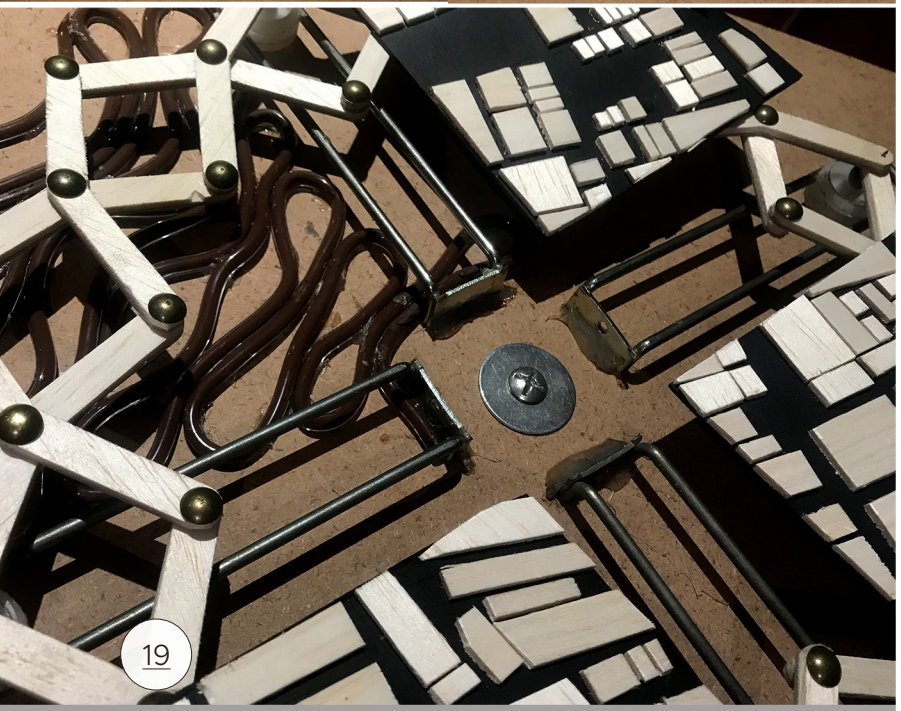


Fig 15 -18: photos of the touchstone contracted and extended (Author).

The site is nestled in an urban environment. Separated from Woodstock by the railway, however, functioning as an island on its own. The Old Castle Brewery has become an amalgamation of identity within Woodstock. Accommodating various people on site, although not integrating them. The site does further accommodate other commercial functions, creatively inclined privately owned businesses and a café which are typical functions of Woodstock. Still, due to the lack of public access, the site fails to fit into the larger Woodstock urban demographic.

However, it does not necessarily have to be integrated into the urban fabric. The site already serves as a beacon on the Woodstock industrial periphery. By amplifying its ability to stand as a beacon, one can create a new identity to be incorporated with its historical memory. Celebrating the site for what it is and already stands for instead of forcing reintegration into Woodstock. A reintegration that not necessarily opts for physical integration but instead proposes integration in terms of urban indulgence.

Upon reflection, the presented touchstone only partially represented this project's intentions. Encompassing the intent of reintegration but only focusing on the physical aspects of coalescing. The partial failure of the touchstone brought attention to other aspects of reconnection, shedding light on a 'pleasure island' typology and its advantages when considering the site. When physical reintegration is unfeasible, it may be possible to draw from the allure associated with the notion of a 'pleasure island' and offer imaginative functions and fantasies of indulgence to draw the atmosphere of Woodstock closer to the site. Therefore, the aim of creating a new future for the heritage building remains; however, physical reconnection is reconsidered as a metaphorical bridging, drawing on the allure of indulgence.

The 'pleasure island' typology is generally regarded as negative, known for its allure and entrapment, similar to Calypso's siren lure, that leads sailors to their death. However, when considered with the intent of the project and the characteristics of indulgence, the typology can be altered to represent an Epicurean approach—an approach dedicated to the devoted enjoyment of pleasures, especially food and drink. Nonetheless, drawing on the allure and propensity of pleasure but removing the 'retribution' associations attributed to hedonism. Freeing 'lured' individuals to enjoy the indulgence of an industrial pleasure island, ethically and free of the fear of entrapment.

Touchstone explained:

City context

The panels on top of the moving mechanism represents the city context and setting. These panels contract and expand to move closer or further away from each other.

Convening

The panels create a complete view of a section of a neighbourhood, once the mechanism is contracted.

Kinetics

Various components are fixed with thumbnail joints, to allow movement. Each component represents a connection - a reconnection or assembly - to create a whole that moves as one.

Trail

The kinetic mechanism is fixed to wheels that allow movement within a track or rail. Contraction and expansion are dependent on the fixed route provided by the rails.

Expansion

The expanding motion represents the reconnecting intention of the project. Expanding as far as possible to interconnect functions, activities and purposes. (Woodstock - isolated site).

Contraction

The contracting movement represents the intention to reconnect the larger city dynamic to the isolated site. Bringing far reached activities, atmospheres and ideals closer to the site, by introducing new functions and access.

Elemental

The underlying chocolate network serves as the medium of reconnection to the city dynamic. Introducing an immersive function to promote user interaction and engagement.

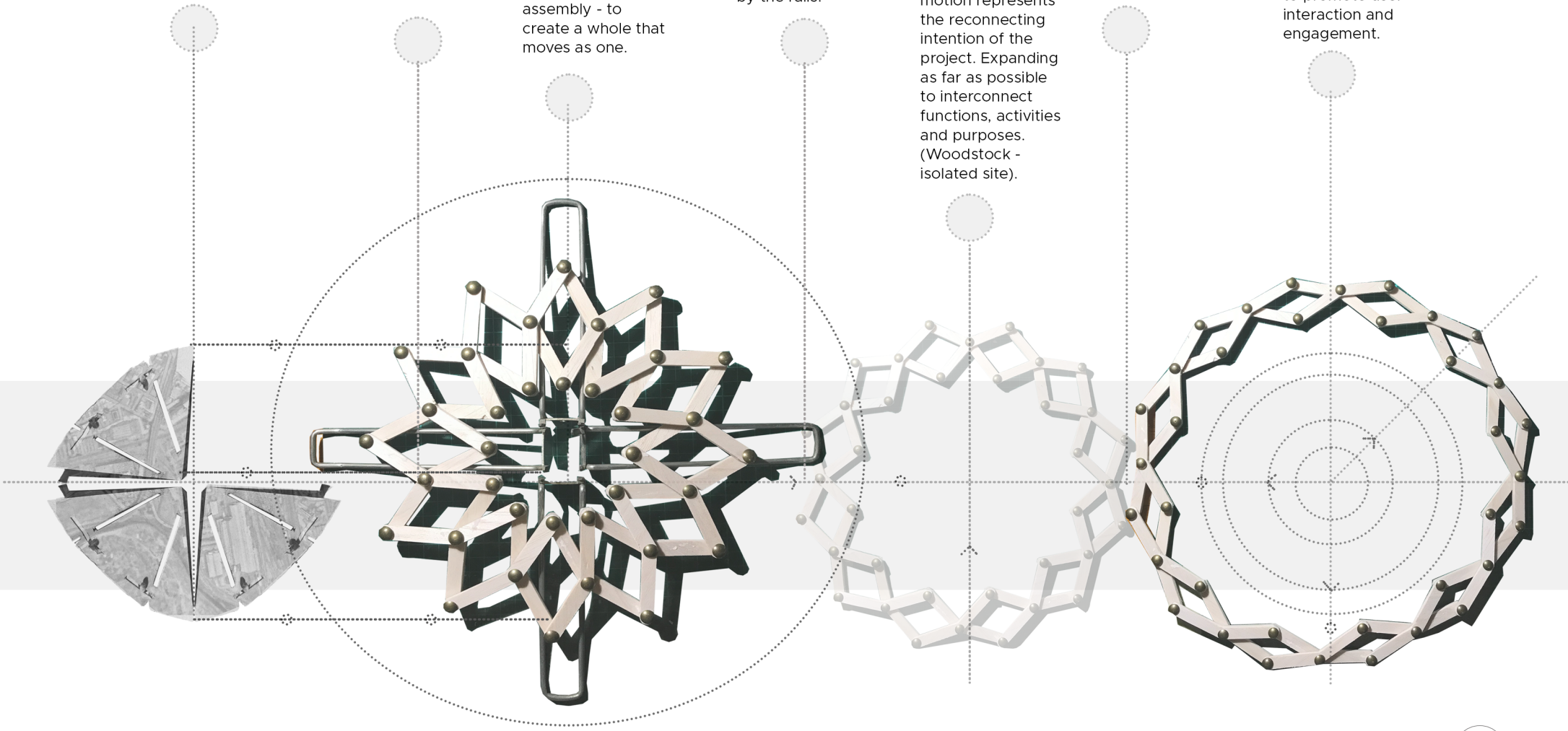
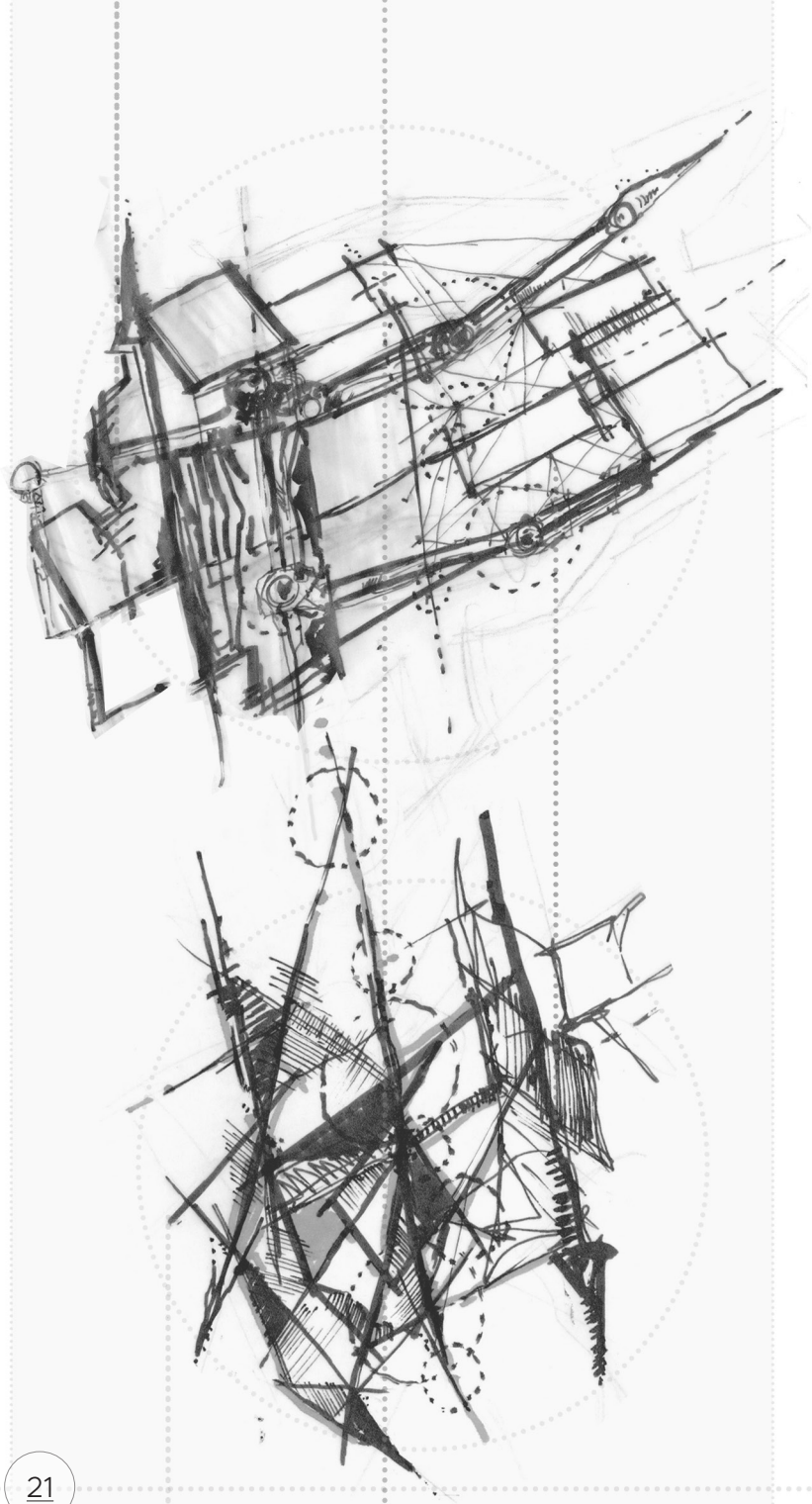


Fig 19: An exploded view of the touchstone components (Author).



2.2. Three Concepts

Mark Wigley suggests, in *Prosthetic Theory: The Disciplining of Architecture (1991)* that a prosthetic is a supplementary structure that extends a host, or the functioning of a host. He further states:

> *"The prosthesis is always structural, establishing the place it appears to be added to" (Wigley, 1991: 9).*

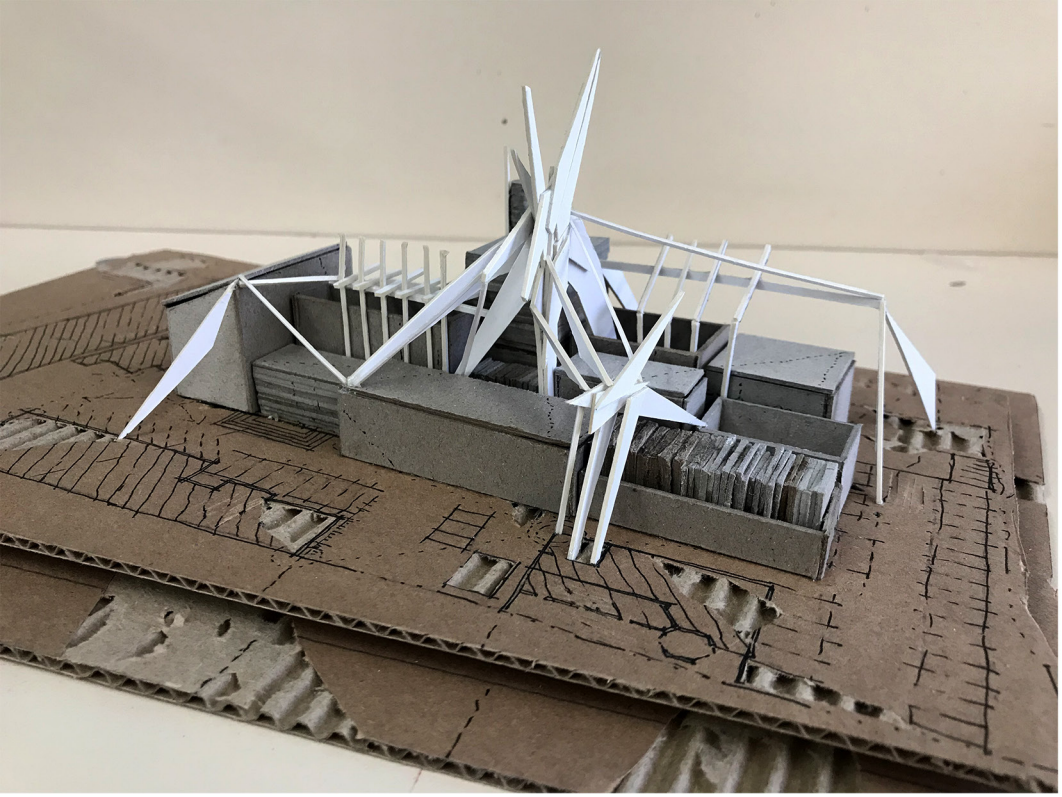
Prosthetic design holds out the promise of creating place, by extending place. Creating extension in a sensitive manner, to not replace reality or the existing, but to merely add to it. Initiating a 'new limb' that becomes a new identity to be implemented with the Old Castle Brewery. Considering the site, location, history, age and urban relevance, one cannot simply reconstruct, remove or rearrange built components.

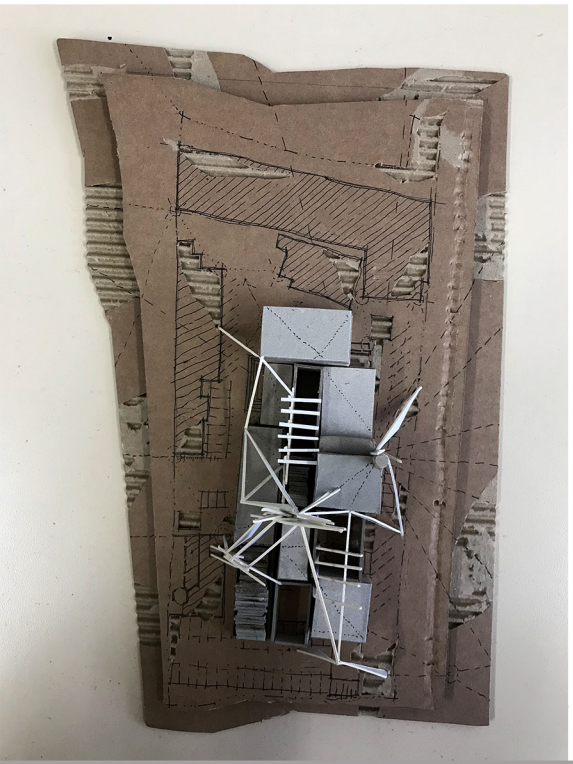
The existing building cannot be removed or drastically changed, thereby making it the site host. A host can however be extended, enhanced, or rehabilitated through the addition of a prosthetic. The concepts identifies three types of prosthetics that intends to learn from the exploration of each approach. Whether beneficial, constricting, or fantasied.

The three identified types are:

- *Parasthetic*
- *Prostithenai*
- *Mutuasthetic*

Fig 20 & 21: Explorative concept sketches illustrating a parasitic entity (Author).





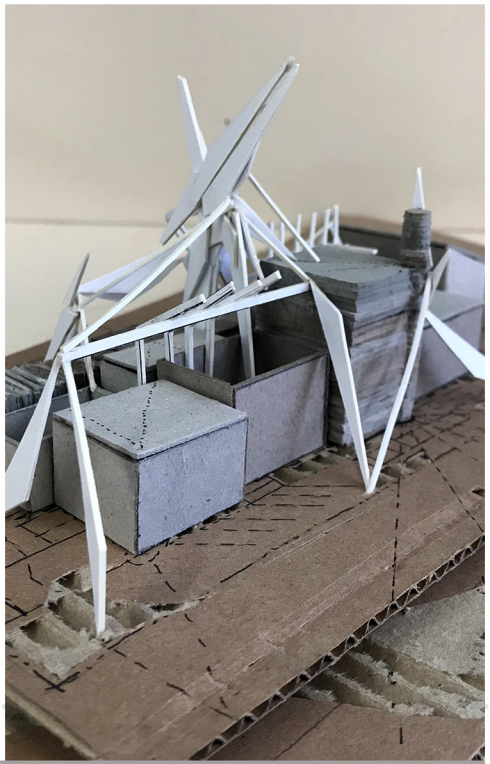


Fig 22 - 24 : Concept model photographs - A looming entity over the existing (Author).

2.2.1 Parasthetic

This concept explores the parasitic relationship between a prosthetic and its host. The *parasthetic* is reliant on the host for resources and influences, such as form-giving, joint opportunities, and support, offering an extension to the host in return. Although the relationship seems harmonious it remains violent in nature. The parasite asserts dominance over the host, seeking to stand predominantly apart from the host in material and form. Yet, it never has the freedom to completely stand on its own. The *parasthetic* becomes a looming entity over the host, seeking to overpower it. The only outcome for a parasitic relationship between a host and an extension is complete ruination. The overpowering *parasthetic* will be the cause of its own demise. First eliminating the host, and then ceasing to exist on its own.

Architectural application:

The *parasthetic* concept becomes the joining link between the existing and the 'artificial limb' or prosthetic. Since the existing building has an embedded steel structure, the *parasthetic* concept will be applied to become a steel structure attached to the existing and the extension. Joining old and new in a skeleton-type structure, similar to a parasite that finds various ways of connecting to the host to become a part of it. Utilizing existing spaces within the building and connecting the extension or prosthetic to them to create a cohesive experience.

Keywords:

- Skeleton
- Parasitic
- Embedded
- Exploitative relationship

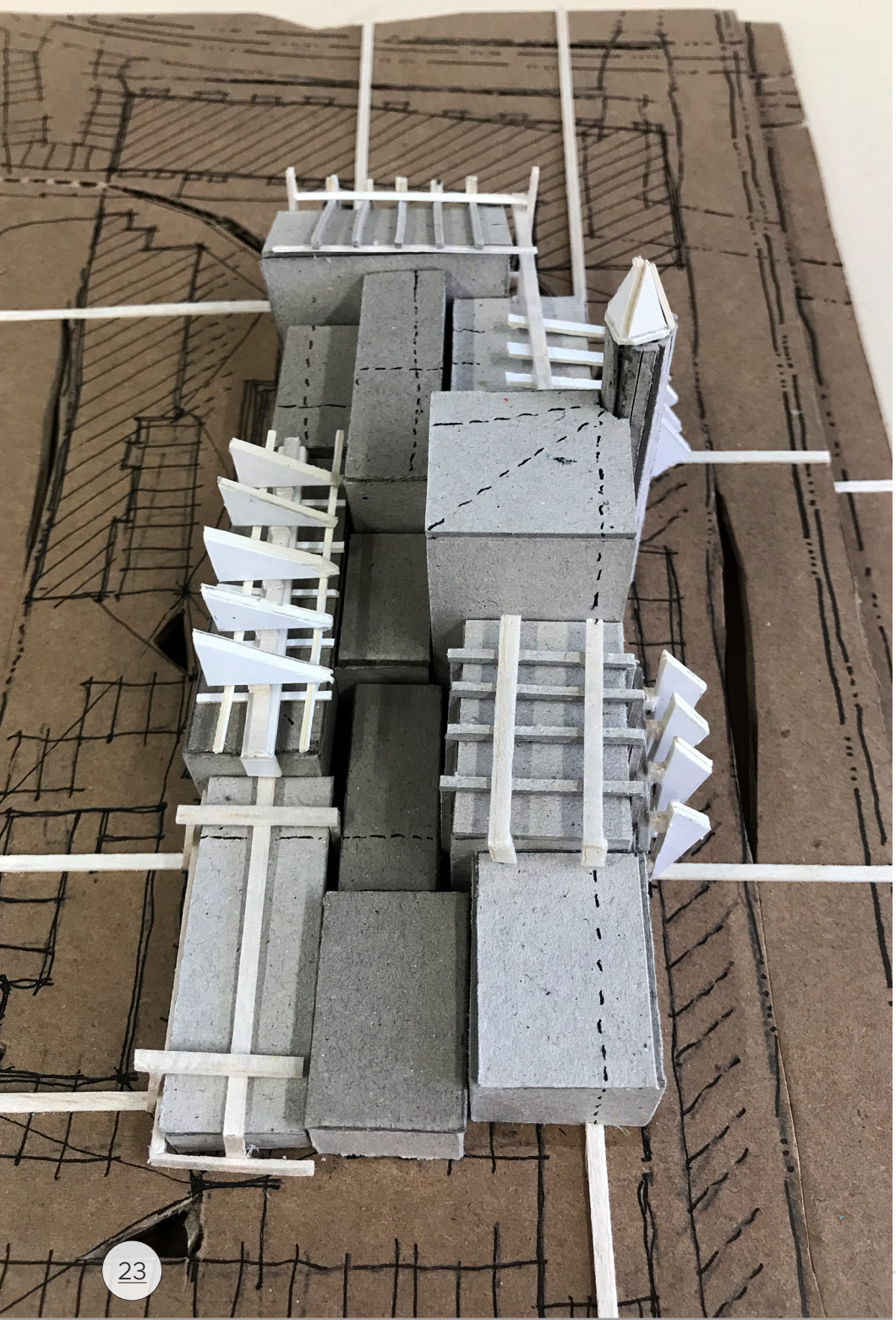


Fig 25 : Concept model photographs - a prosthetic extension (Author).

2.2.2 Prostithenai

The name refers to the Greek origin of the word prosthesis - in essence, meaning an extension place, or the extension of place. This concept investigates a symbiotic relationship between the host and the prosthesis. Requiring the support and influences of the host to become an extension aiming to achieve one of three outcomes: rehabilitation, enhancement, and blurring identity. The *prostithenai* seeks form-giving and influence from the host to become a more natural extension- yet being able to differentiate between host and prosthesis. This concept is based on Mark Wigley's, *Prosthetic Theory: The Disciplining of Architecture (1991).* Where he states:

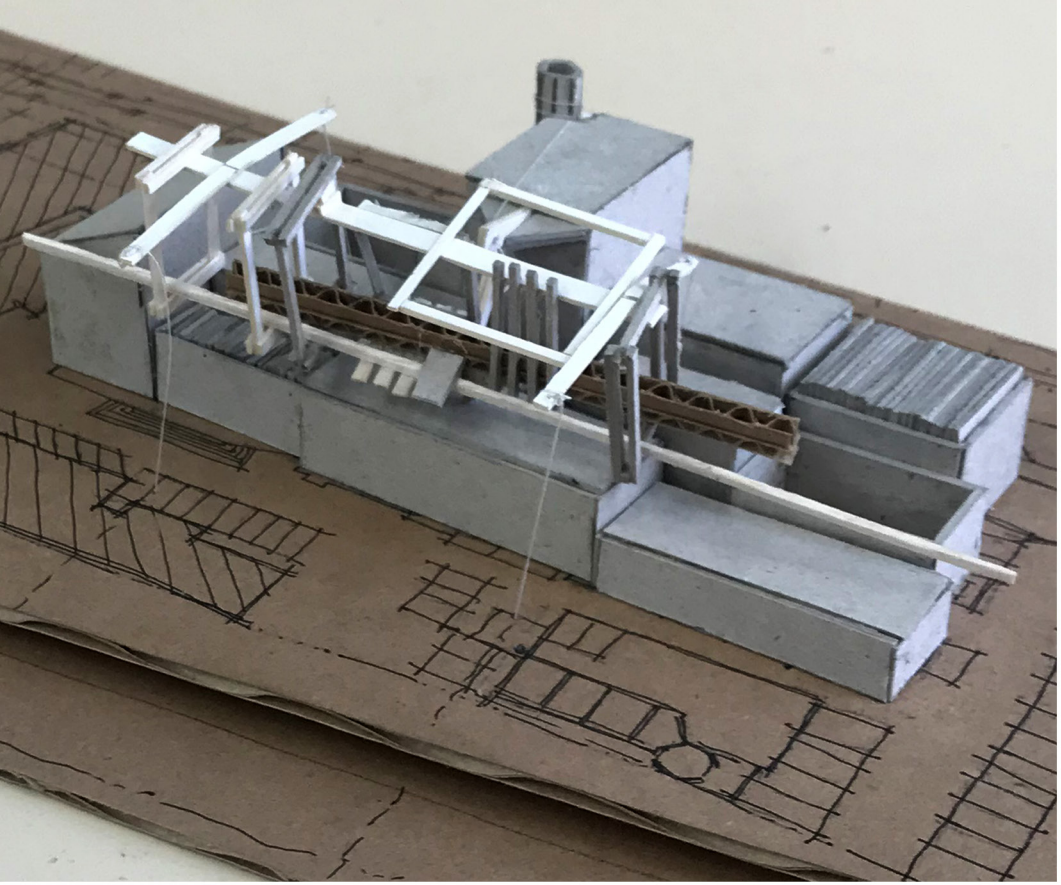
> *A prosthetic is always the supplement of structure, that cannot simply be removed. It is a foreign element that reconstructs that which cannot stand on its own, at once propping up and extending its host (Wigley, 1991: 9).*

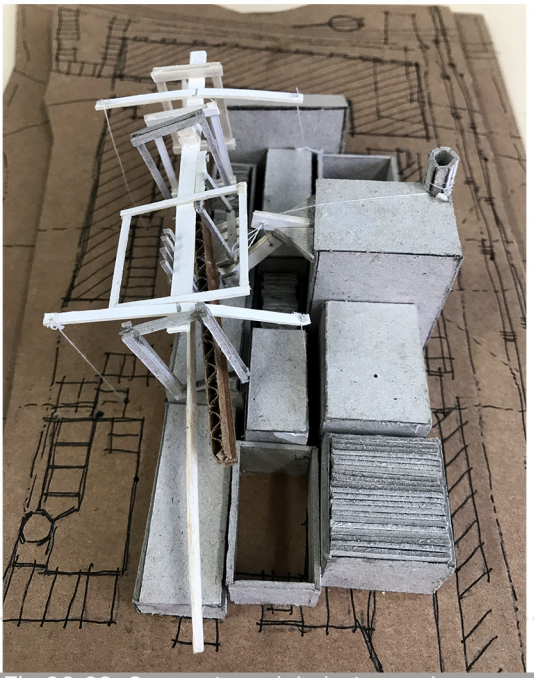
Architectural application:

This concept acts as medical prosthetics would for a host or patient, taking on the exact form of the existing building and constructing extensions based on the point of attachment. The structure would convey the essence of its needs, like a medical prosthesis, that does not imitate the real-life aesthetic of the limb it's replacing but rather becomes the skeletal structure to complete its functioning task. In some cases, it offers more than the 'normal or customary limb' it is replacing. As such, it holds out the alluring promise of augmentation. The *prostithenai* is no different. It becomes the most 'minimal' extension possible of the existing building.

Keywords:

- Extension
- Mimic
- Essence of need
- Minimal





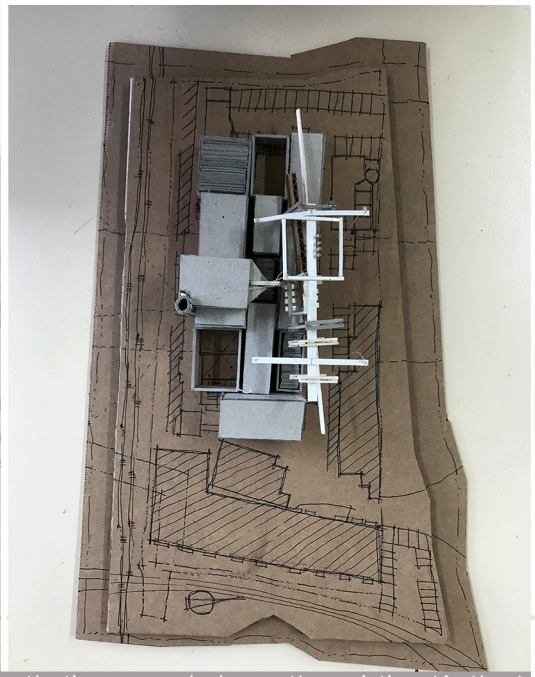


Fig 26-28: Concept model photographs - a prosthetic suspended over the existing (Author).

2.2.3 Mutuasthetic

This concept centralises focus to a mutualistic relationship between the host and the prosthetic. Albeit rooted in fantasy and the indulgence of imagination. The host becomes the prosthetics' anchor to reality. Where reality and fantasy are in a mutualistic give and take relationship. Constantly in tension with one another.

The prosthetic becomes an artificial limb bonded to the host , submitting control to the host yet also being open to exploration or extension - neither are overpowered, neither are surrendering. The prosthetic finds form from within the host yet seeks to create its own- a constant tension – suspension.

Architectural application:

The elevations and sections are based on the model for the *mutuasthetic* concept, becoming like a floating structure, with moveable cladded or covered facades, that aims to create a more cohesive Northern façade, as it is currently disjointed due to the variety in additional structures and levels. Together the concepts and explorations lead to the idea of a skeleton structure, covered, or cladded in a 'skin' extending over the building complex to frame and compliment views.

Keywords:

- Fantasy
- Cohesive
- Skin
- Cladding

2.3 Conclusion

The exploration of the touchstone and three concepts assists in the development of a base for further theoretical investigation. The project's conceptual phase aids one in identifying the critical elements of one's possible design strategy, allowing further in-depth research into layered theoretical ideas. This chapter explored the opportunity for intervention via prosthetic architecture by investigating the three potential relationships between a host and its prosthetic. Furthermore, providing an opportunity for reflection on the process of developing a touchstone. By identifying successful contributions, such as the development of an Epicurean approach by utilizing a 'pleasure island' typology in a reinvented custom. As well as identifying the failed outcome, such as the unfeasible physical reconnection, that leads to the utilisation of a metaphorical connection through indulgence.

The concepts assisted with the identification of terms such as prosthetic architecture, specifically *parasthetic, prostithenai* and *mutuasthetic*. Within the following chapters, these terms will be explicated in terms of their layered value, further exploring other possibilities within prosthetic architecture apart from these specific terms.



Fig 29 - 31 : Exploration sketches of prosthetic architecture models (Author).

03

Context Scrutiny

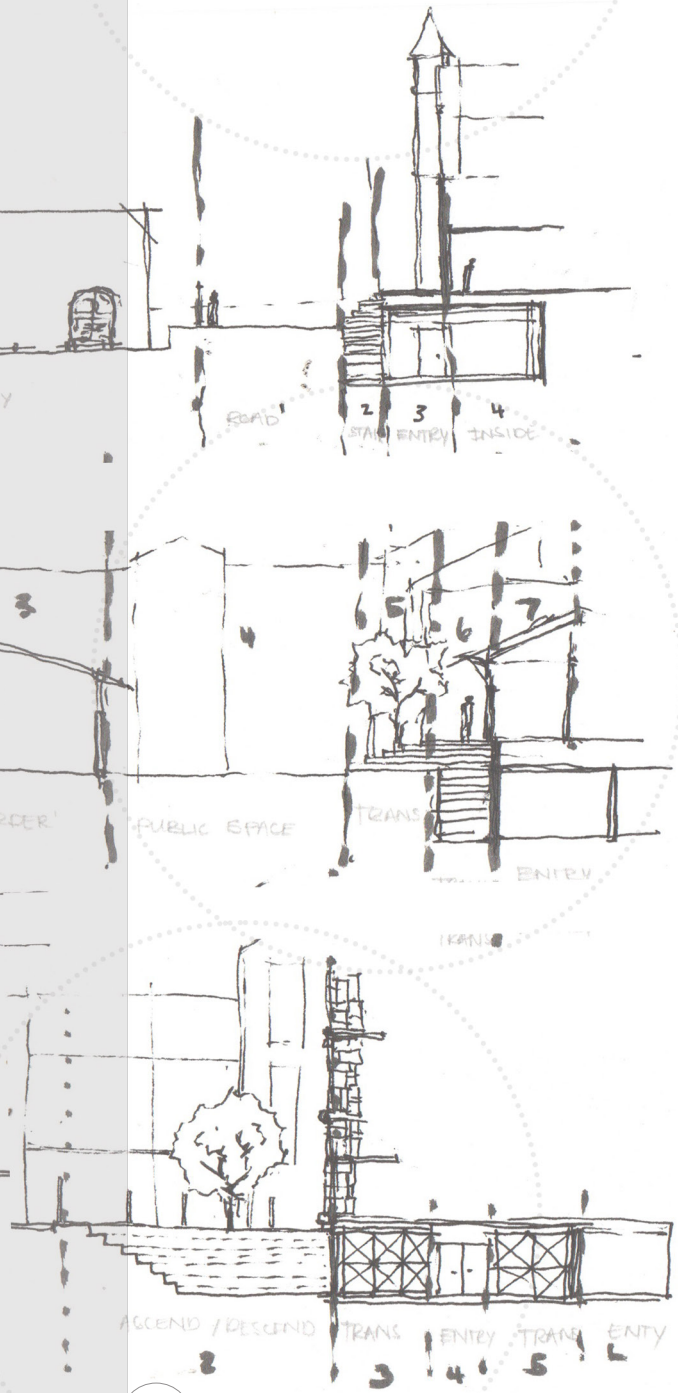
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3.5 Conclusion 46



3. Context scutiny

Heritage Western Cape is the local governing authority that protects and wards protection to heritage structures within the Western Cape. This governing body utilises and implements the National Heritage Resources Act (Act 25 of 1999) to manage and protect cultural and historic resources. This act requires councils and authorities to grade heritage resources for managerial responsibility. This grading determines the appropriate significance of heritage structures to protect and conserve valuable historic resources (Heritage Western Cape, 2016: online).

Furthermore, this act states that all buildings older than 60 years are to be managed and protected by local governing authorities, including SAHRA, the South African Heritage Resource Agency. Structures older than 60 years require a permit to make changes to a building or site. The Old Castle Brewery Complex, built between 1901 and 1902, is protected by Heritage Western Cape (Heritage Western Cape, 2016: online).

Willem Otten, a professional architect, involved in the restoration and maintenance of the Old Castle Brewery Complex for the last 30 years, states that the building has been graded by Heritage Western Capes' system. However, the grading is unknown to him. The complex has been modified and sensitively reused, which leads to believe that the structure would be graded Grade III. This grading refers to resources that contribute to historical, heritage or cultural significance; however, the structures can be modified to a certain extent through application and approved plans.

This chapter will identify the most significant historical and cultural aspects of the Old Castle Brewery. Similarly, other site characteristics that could impact the development of a design strategy will be identified and illustrated. The analysis of the building will progress from visual analysis to a more in-depth exploration of the site's macro, meso and micro- properties.

Fig 32 - 34: Threshold explorations of site components

Old Castle Brewery, Woodstock, CPT.



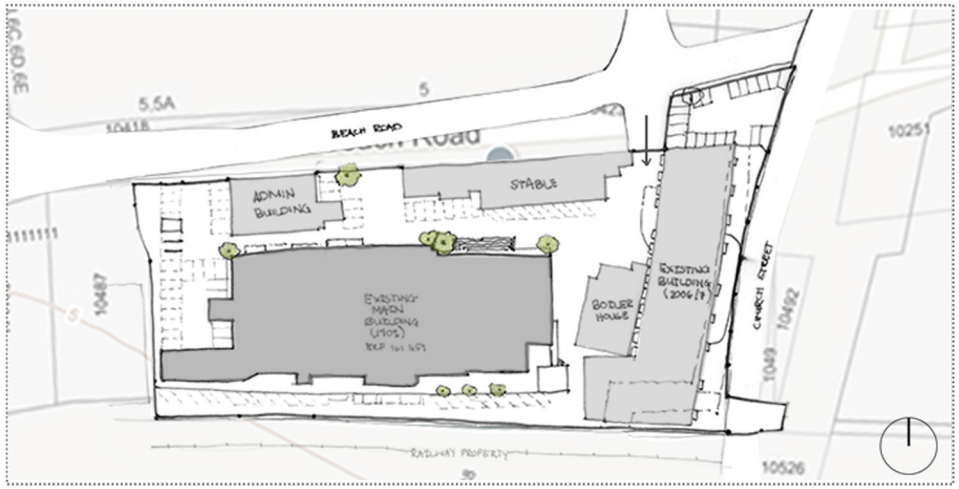
Fig 36: Courtyard within the complex (Author).



Fig 35: Southern facade towards the traintracks showcasing the tower and turret.

Fig 37: Southern facade materiality and arched detailing with various brickwork(Author).

3.1 Visual analysis



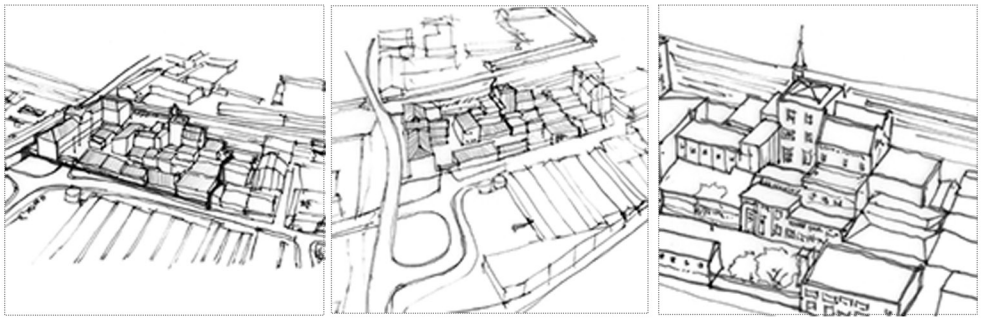


Fig 38-45: Top: Perspective sketches of the site. bottom: sketches of site (Author).



The site is located in Woodstock. A culturally and historically enriched neighbourhood in Cape Town. Woodstock was initially known as Papendorp and was incorporated into the Municipality of Woodstock in August 1883 (Old Castle Brewery, 2022: online). It can be identified by its industrial periphery, enclosed by factories, businesses, and the railway. This periphery is underway to be adaptively reused as more industrial buildings are repurposed for contemporary functions. The Old Castle Brewery is one of the historic buildings undergoing change.

The main existing building consists of 5 units. Each unit is built on a heavy stone load-bearing base, with a roof and flooring system comprised of cast iron I-beams and concrete (Old Castle brewery, 2022: online). The building complex accommodates 90 different organisations, which totals approximately 300 individuals working on site (Otten, 2022: interview). The railway was once accessible from the building complex, serving as the main transportation route in past times. Presently it cannot be accessed from the site (Old castle brewery, 2022: online). The tower or turret houses a spiral composite structure hilted at each new thread. It offers daily access to a limited number of staff working in the upper-level offices (Old Castle brewery, 2022: online).

3.2 Historic background

1900 - 1902

Castle Brewery, designed by H. Steinmann, an American architect, officially opened 1 April 1902. Built for Castle Beer Brewery in Woodstock, Cape Town



1930 - 1940

In the early 1930's, silos were built to house additional beer brewing ingredients. The boiler house underwent modifications at the same time the silos were constructed. In the later 1940's warehouse components were built



1955

SA Metal bought the building from SA Breweries. Stripping the building of several metal fittings including storage vats, steam pipes, boilers, copper- and brass fittings.



1956

I & J Ocean Fresh / Garden Fresh took over the building, converting the structure to become a large-scale freezer. The structure was insulated with cork, and original features, such as windows were bricked up (fig 4).



1982

Mr Max Arlen gained ownership of the building. Assessing the deteriorated state of the building and implementing restorative measures. Willem Otten took charge of the restoration process, attempting to restore the building to its former glory (fig 5).



2004

A 9m, 3 1/2 ton galvanised steel and slate steeple was reinstalled. Bringing back the castle semblance of the building, once intended as an advertisement for Castle beer (fig 6).



2006 / 2007

Kruger Roos Architects developed the new additions to the eastern side of the site. Designing a building to take inspiration from the large-scale brick and steel work from the main building (fig 7).





Fig 46: Photocollage compiled of historic and site visit photographs (Author).



Fig47: Exterior view of the complex from the top of Beach Road (Pournejati, 2022: photo)



Fig 48: Aerial view of the complex (Pournejati, 2022: photo)



Fig 49: Southern facade, main facade that served the traintracks (Author).









Fig: 50-53: Left: Existing cast iron columns in various spaces (Man makes a picture, 2014: online). Right: Turret top before reinstallation in 2003. (Naturally slate, 2022: online).



Fig 55 Two cast iron columns and vaulted floorslabs (Swindon, 2022: online).



Fig: 54 & 56: Left and right bottom: Four cast iron columns extending from the basement level (Anvil (a),2022: online).

3.3 Macro analysis - The periphery

The Old Castle Brewery Complex is nestled within the Woodstock industrial periphery, between two identifiable zones. The two zones are the Transportation zone and the more vibrant Woodstock zone (see fig 57). Both zones are mainly separated from the complex by railway, restricting access to the Old Castle Brewery. Access to the complex via the transportation zone is primarily from FW de Klerk Blvd, transferring to Lower Church Street and then to Beach Road. Lower Church Street further allows access to Beach Road, from inner Woodstock, via Albert Road and connecting streets further south.

An assortment of businesses and manufacturers surrounds the site. Establishments that range from autobody shops to catering equipment showrooms. All these industries make up the fabric of the industrial periphery, shaping a manufacturing architectural atmosphere with predominant characteristics. Complexes to all sides of the Old Castle Brewery Complex are comprised of warehouses, loading areas and clusters of smaller buildings on one erf or site. Similarly, the Old Castle Brewery Complex comprises various buildings clustered on one site. One key difference to its surroundings is the inner circulation within the complex boundaries. Once granted access to the complex, one can easily move between the historic buildings, allowing a visitor a tour through history when exploring the notable red brick buildings.

As previously mentioned, the site's most significant and largest building was built and opened between 1901 and 1902, suffering a delay in its completion due to the Anglo-Boer War (Old Castle Brewery, 2022: online). The building was constructed towards the southern sited railway as an advertisement for Castle Beer. Therefore, it was determined that the building would emulate a medieval castle (Old Castle Brewery, 2022: online). Built primarily in English-bond red brick, the building stands out from its surroundings, demanding attention as one crosses the Lower Church Street overpass into the centre of Woodstock.

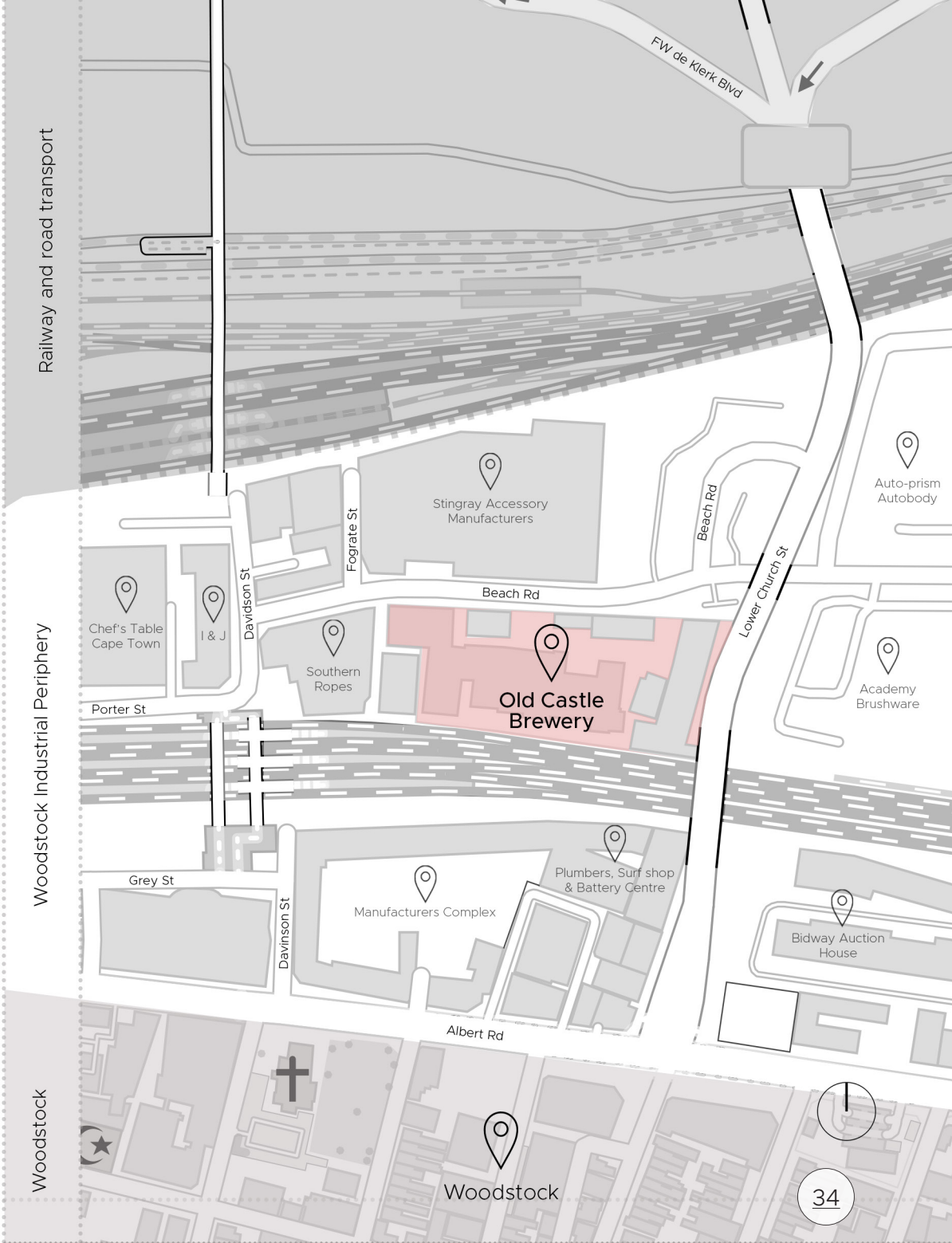


Fig 57: Macro analysis of the site, showing various zones and surrounding industries (Author, 2022).

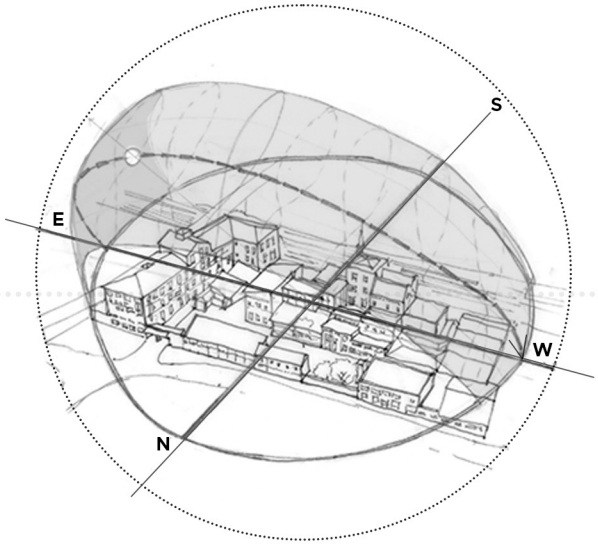


Fig 58: Sun path (current) with alternative paths indicated (Author).

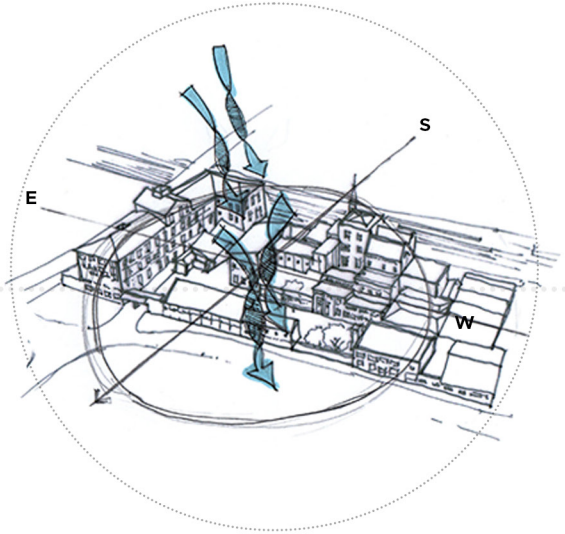


Fig 59: South Eastern prevailing wind factors & influences (Author).



Fig 60: Access from main roads to site (Author).

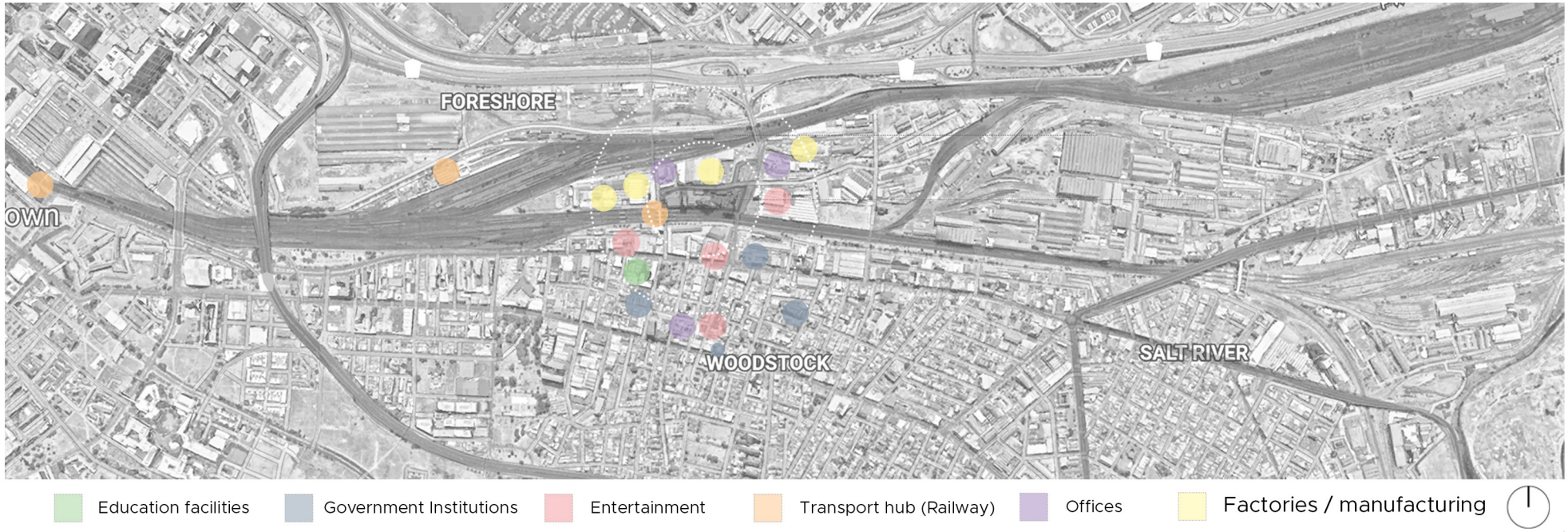


Fig 61: Aerial view of CPT (Google earth, 2022: online, adapted by author).

Meso analysis - The complex

The Old Castle Brewery Complex consists of a variety of historic structures. These structures include an existing admin building, a repurposed stables building, and an existing boiler house. The Admin building, as identified in fig 62, is constructed with red brick in English bond. However, the bricks have been painted white in contrast to the Old Castle Brewery Building or main building. Various single stone layer detailing to the Admin building resembles the detailing of the main building. Comparable, the Admin building is also built on a Table Mountain stone base. The adjacent Stables building is also constructed of English-bond brickwork. However, these bricks are various shades of red and brown in contrast to the main building and the Admin building.

The Stables and Boiler House buildings share most features, including brickwork construction and red corrugated sheeting roofs. Both buildings have been repurposed for contemporary use, preserving the exterior and reusing the interior. The main entrance to the complex was redone in conjunction with the construction of the new building in 2007. It consists of a lighter red brick with concrete details, in contrast to the vibrant red brick of the main building.

The site only has one main route of entry through the gatehouse. All building users access the complex by using this entrance. Other access points have been restricted for security purposes. The railway is currently blocked off from the building complex, although the building shows characteristics of past access to the railway. The access restrictions are mainly to vehicular movement, providing pedestrians with a safe and accessible compound. The compound speaks of fantasy and wonder, allowing visitors to take in the stately red brick structures and towering turret, with excellent views towards Table Mountain. The finer details of the structures are considered the most significant in historic value. In the next subdivision, these details will be exemplified.

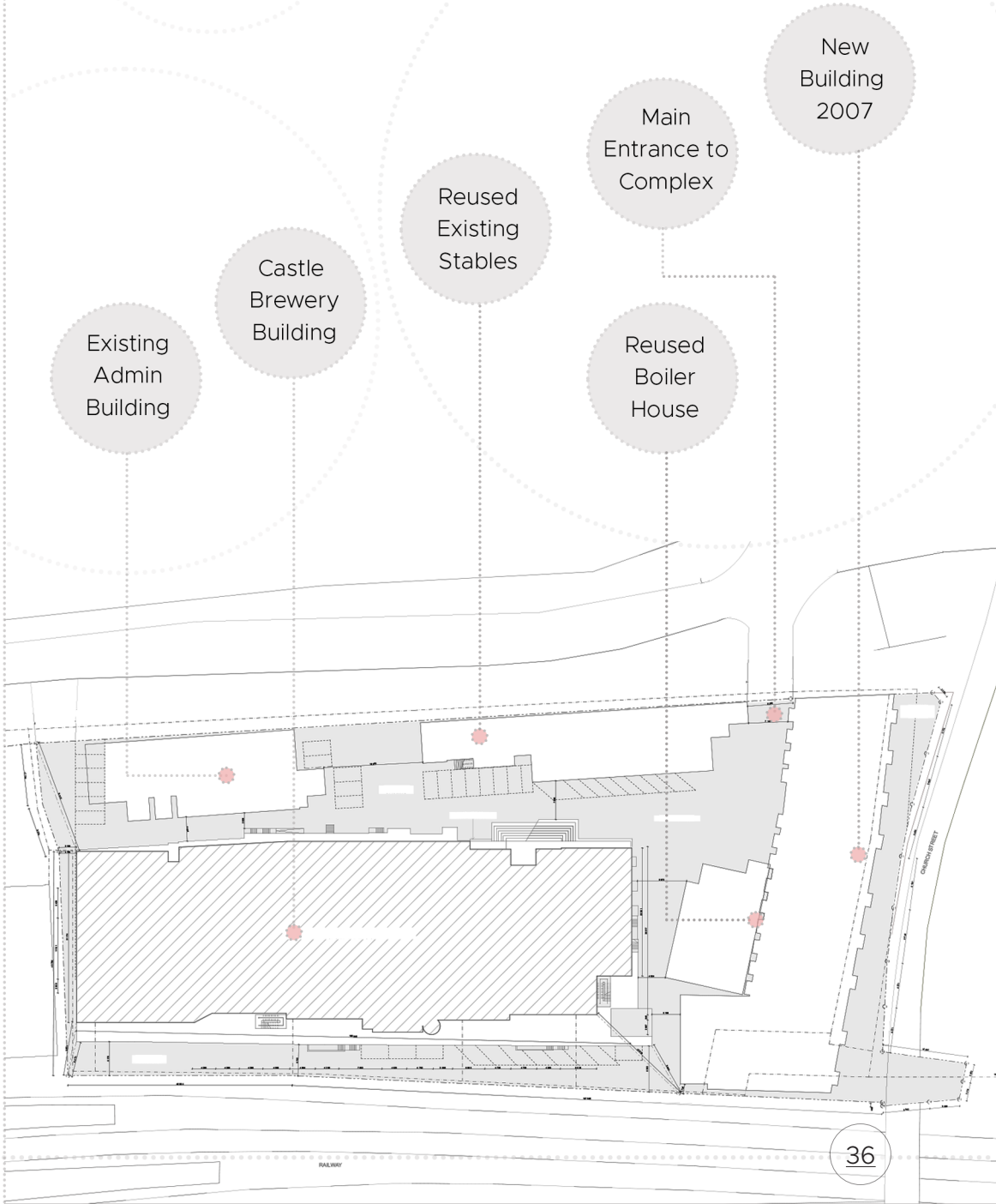


Fig 62: Analaysis of existing key features on site, with closer invetigation to the site layout (Author, 2022).

Micro analysis - The Burra Charter

The finer construction and design details of the Old Castle Brewery make up the building's most significant cultural and historical aspects. These details aid in the creation of the building's aesthetic and atmosphere and creates a recognisable identity for the building. To sculpt a sensitive adaptive reuse approach, one must consider the impact of the preservation or removal of specific characteristics of the Old Castle Brewery. These characteristics must first be identified and then divided into categories of importance to the buildings' identity. To aid in the identification of significant features, one can utilise the considerations set out in the 2013 Burra Charter or The Australia ICOMOS Charter for Places of Cultural Significance. In this section, The Burra Charter will only be applied to identify significant attributes. The definitions and intentions of The Burra Charter will be exemplified in chapter 4, subsection 4.4.2 Ethics in adaptive reuse.

The identified features are considered essential to the cultural and historical significance of the building and site. These features are to be preserved to maintain the character, shared memory and lived experiences of the building and its users. Other aspects of the building may be altered, with noteworthy consideration in respect and sensitivity, as it will not impact the historical significance of the building. Historic photographs and depictions of the building allow one to compile a list of important aspects for preservation. The identified characteristics are as follows. Distinct brickwork to the southern façade creates protruding and sunken patterns in arched and rectangular shapes. More distinct brickwork can be seen in the tower and turret. The tower's top conical shape, reinstalled in 2004, is constructed of natural slate. The base of the building, which includes the tower, consists of Table Mountain stone. This stone forms part of the few materials that were acquired locally. Many of the other materials were imported from America by architect H. Steinmann.



Fig 63: Micro analysis of the southern facade, identifying key attributes that must be preserved (Author, 2022).



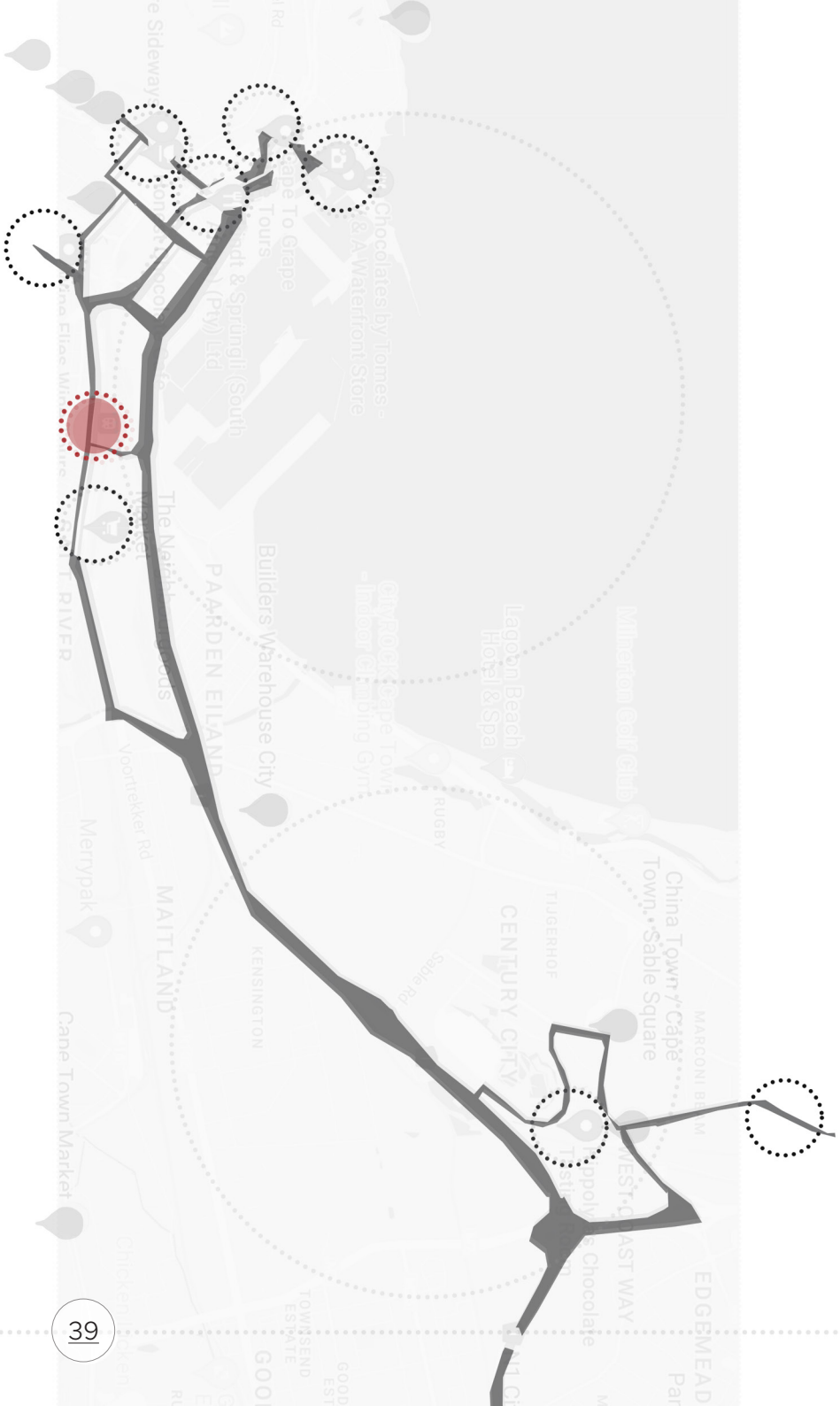
Fig 64: Two existing floorplan with overlays to indicate the most important spaces and walls as identified (Author).



Fig 65-67: Top: Floorplan showing the most historic part of the building. Bottom: significant historic attributes (Author).

Different materials of importance include the cast iron fenestration, spiral staircase within the tower and the large-scaled embedded cast iron steel structure. The embedded structure is one of the characteristics that must be preserved and utilised as it is one of the central structural systems supporting the brick building. The sizeable expanse of English-bond red brick constructed façade allows one to change or add to the façade without impacting the overall character of the building. However, identified facades such as the southern and eastern facades will be preserved entirely to remain respectful in adaptation. The southern façade consists of three main portions horizontally, determined by the alteration in heavy stone stringcourses and detailed brickwork (Old Castle Brewery, 2022: online).

On floorplan, refer to fig 64, a portion of the structure has been identified as the most historic. Newer additions to the northern side do not form part of the most significant cultural and historical identity and can be altered without great consideration. On the interior, structural systems, such as the vaulted floor slabs, are to be preserved to an extent to retain the historic impact but can be altered to introduce new additions. Red brick interior walls are also to be preserved to a degree but can be changed with consideration. These aspects are the most essential features to be preserved or considered when developing a design strategy. Various other elements are important but do not make up the most significant fabric of the building's identity. Attributes that will be noticeably changed will be mentioned in chapter 6.



3.4 Spice, wine & chocolate route

The idea of a chocolateria is to offer visitors an immersive experience based on the crafting process of chocolate making and to encourage public interest and interaction. Chocolate making or cacao-poiesis can form a part of the existing spice, wine, and artisanal route in and around Cape Town that makes its way through Woodstock. The route includes both a physical and poetic connection between the outskirts of Cape Town and the city centre. It also manages to tap into the existing chocolate routes with various functions and artisanal endeavours complimenting chocolate.

The connection to the chocolate & wine route offers a connection to the larger extent of Woodstock, as well as the outskirts beyond the Cape Town borders. The route starts in the Paarl, meandering to end at the V & A Waterfront, initiating a route within the larger surrounding context, moving closer to the site. The Old Castle Brewery is indicated in red on the illustrated map, showcasing the route from the Paarl into Cape Towns' city centre.

Fig 68: Abstraction of the chocolate, spice and wine route (Author).

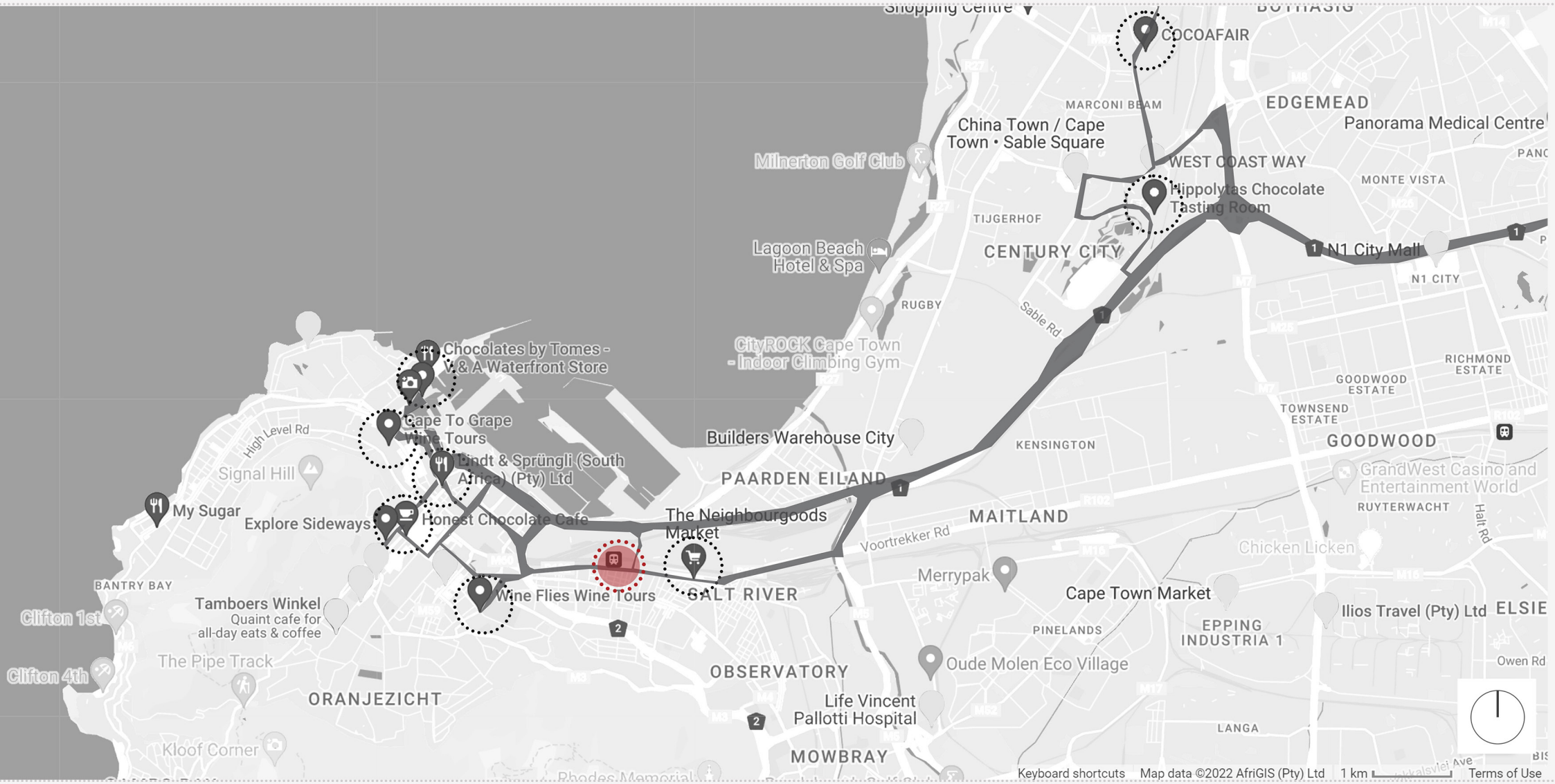


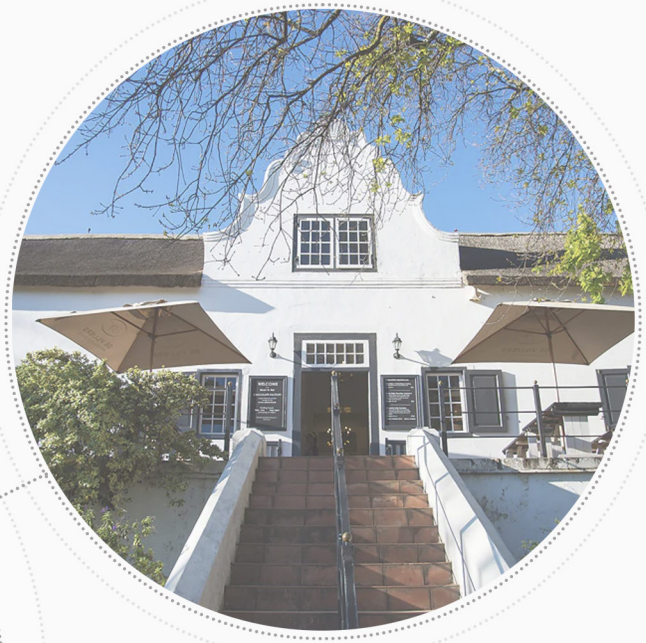
Fig 69: Developed Chocolate route within closer context, the project site indicated in red (Author)

Chocolate, Spice and wine route destinations:



Babylonstoren

Fig 70: (Bridges & Balloons, 2022: online).



De Villiers chocolate

Fig 75: (De Villiers, 2022: online).



CACAO fair

Fig 71 - 72: (Cacao fair, 2022: online).





HONEST Cafe

Fig 73: (Tripadvisor, 2022: online).



Neighbourgoods Market

Fig 74: (Veldman, 2022: online).

Accommodation list:

The accommodation list stems from the main spatial requirements for a chocolate factory, according to the chocolate-making process and various attempts to turn these functional requirements into moments of ethical indulgence. Some functions include communal and interactive spaces such as a beverage bar, tasting lounge, an immersive retail experience, and a stacked chocolate production core. The compiled list that is illustrated on the following pages, does not include all functions, and space requirements. It contains all the main divisions of space.

Program:

- Beverage bar
- Immersive retail experience:
  - Chocolate showroom
  - Exhibition
  - Chocolate fountain (exhibition)
- Stacked chocolate production core
  - Cacao bean washing
  - Cacao bean roasting
  - Cracking and Winnowing
  - Chocolate grinding and tempering
- Chocolate spa (facials, massages, masks, scrubs)
- Chocolate workshops (public)
- Chocolate development laboratory
- Tasting lounge
- Tower climbing and viewing experience







Fig 76-78: AI generated interior perspectives, using the prompts “Charlie and the Chocolate Factory, indulgence, architectural interior’. Initial images through Midjourney AI and perspective paint through DALL-E AI (Autho

Space name/ function	Requirements/ equipment	size calculation	Sqm	Extra
Chocolate making process				
1. Bean harvesting / storage	Bean harvesting &7 fermentation & drying: occurs at of origin (Honest: Tanzania). Storage required for protecting beans: Gastight, moisture tight, warehouse/ silo's, isloated from main part of production structure, good air circulation.	dependant on the size of production	130	Beans: stored in silos. Otherwise beans are stored in bags to be stacked with good ventilation. Estimate
2. Bean cleaning	Removing debree from the beans: Machine sorted. Space for moving beans from storage to cleaning hub. Holding station (feeding beans to machine), removal of debree, cleaned bean storage	dependant on machine (sieve) size:	55-65	Rough estimate to sqm: can be done by hand as well. Storage of cleaned beans innclued. 30 + 25
3. Roasting	Rotary cylinders / drum roasters (dimensions dependant on size of production). Small, medium or larger scale roasters dimensions. Options for roasters: Cylindrical batch roasters, spherical (ball) roasters, Cocoa bean cooling.	small: 843x661x1718 medium: 1210x1500x1530 Large: 14660x1760x1820	40 - 60	Medium roasters x 5 (max: 2x 5)+moving and circ. (1.5x 10) Space+ bean cooling.
4. Bean cracking	Roasted and cooled beans are run through a mill. Separating the cocoa nibs (for chocolate) and husks. Options: manual/automatic crakers (dependant on size/ scale). Light and heavycapacity. Sized screens & buckets for sorting .	light: 15kg capacity: 584x381x355 Heavy capacity: 28kg: 609x355x381	45-55	cracker machines (heavy cap: x 5 max (5sqm)+ equipment storage: 25 + circulation:+ - 15
5. Winnowing	Process of removing husks from roasted and cracked mixture. Air supply: to blow air through mixture: forces husks to separate from the cocoa nibs. Equipment needed: Metering dispenser & Winnower.	Standard winnower dimensions (excl. metering dispenser): 635x457x381	30-45	(0.7x0.5:0.35 -- x 5: 1.75sqm) + circ: 25
6. Grinding	Pregrinding equipment: batch knife mill / Continuous knife mill/ Roll refining / Ball mill. Grinding: grinds beans into smooth texture & consistency. Addition of other ingrediants such as cocoa butter & sugar. Options for grinders: small: large.	small: 914x914x1574 Large: 762x814x1397 (450kg: equipment weight)	60-70	Machines: 1 x 5 + circ: 5+15. Floorsp: 40
7. Conching	Optimizing chocolate flavouring: evaporate excess moisture, homogenize chocolate, stabilize chocolate. Equipment needed: Single shaft conche/ double shaft conche, longitudinal conche. Other equipment used: Stone wheeled melangeurs: usually for artisanal/ craft use.	Small / medium capacity (27kg): 870x640x1000 Medium/ large capacity (65kg): 800x1070x1180 large scale (77kg): 1090x750x1240	65-75	Medium capacity: 1 x 5 + circ ssp: 5 + 15. Floorsp + working space: 45
8. Tempering	Manipulating the temperature of liquid chocolate to affect the growth of the correct matrix of cocoa butter cyrstals (process right before moulding): ensures shine & cracking of chocolate bars. Artisanal kitchen equipment: Granite slabs, metal spatulas, thermometer. (Working & folding chocolate on the granite slabs to cool the chocloate to a certain temp). Other option: automate machinery.	Automated machinery dimensions: small (24kg): 658x500x1450. Medium (40kg): 761x580x1555 Large (60kg): 660x500x1653	100-140	medium capacity: 1 x 5 (5) + granite slab workspaces: at least 10-15 people (min): floorspace: largest sp: 80-100
9. Moulding	Hand moulding / automated. Equipment: moulding lines, kitchen space (granite slabs & workspace).	Floorspace described for automated moulding lines: Chainless: 100-250sqm Pneumatic: 35-130sqm Small scale: 6-8sqm	100-150	2 separate stations: 1 chainless: 100-150sqm + small scale workshop: 8 x 5
10. Cooling & packaging	Equipmet / space needed: Cooling tunnels, well ventilated kitchen space, Workable surfaces for wrapping & packaging. Storage for paackaged bars	Dependant on scale/ size	80-100	sufficient space for working effeciently & comfortably (floorsp + circ)
Additional aspects to consider				
ISSUE	POSSIBLE SOLUTION			
Large windows at the production stage can be damaging: large windows let in more heat that may increase or decrease chocolate temp at unwated times	Production stage spaces should have acces to indirect natural light/ filtered direct light.			N/A
Waste management: Cocoa butter & fat hardes when it cools down (blocks pipes)	Horizontal waste water paths should be less than 3m (max) with the addition of a grease trap.			
All automated equipment emits heat that needs to be evacuated (can interfere with temperature control of liquid chocolate)	Rooms/ spaces need to be well ventialted: naturally or air-conditioned.			
Public spaces (circulation & arrival)				
Space name/ function	Requirements/ equipment	size calculation	Sqm	
1. Reception	Within the existing building: welcoming to visitors. Introducing the visitor to the main, historical building, leads one to the larger extent of the site). Housing: 25 50 max	Based on the standing sqm requirements used for theatres: 0.6-0.9sqm/ person x 50 max	45m2	N/A
2. Circulation	Corridors, space to move between functions wwith ease, with necessary required equipment and resources (wide enough to house the movng around of ingredients).	Based on the mixed standing and seated sqm requirement: 0.7-0.9sqm / person	N/A	
Immersive experiences				
1. Café	Seating (booths & table), workspace (students), coffee bar, kitchenspace, storage, waste management, smoothie bar/ station, juice bar.	based on the sqm for a full service restaurant: 1.1 -1.3sqm/ person	115	1.5 x min 30: 45sqm + kitchen (40) + circ (30)
2. Chocolate workshops	Workstations (incl:storage for needed kitchen utensils, equipment needed for the workshop, sufficient space for working/ participating per person), Appliance bridges (shared equipment between workstations), storage (for visitors to store belongings), main workstation (leader of workshop/ example workstation).	based on: The food preparation area should have space for six kitchen workstations to accommodate up to 24 students.	R: 75m2	N/A
	The workshops include various stations (thus 75m2 per station). Each part of the chocolate making process can accommodate a type of workshop.			
3. Tasting lounge	Similar requirements to café: seating (variations), serving counters, kitchen, stations (types of chocolate), unique feature.	based on the sqm for a full service restaurant: 1.1 -1.3sqm/ person	135	1.5 x min 30: 45sqm + kitchen (40) + circ (30) + shelving / tables (20)
4. Museum (building)	Offering a history of the site (walkthrough: framing key points within the existing building). Offering seating, information panels, courtyards (interior/ exterior for viewing).	Based on the mixed standing and seated sqm requirement: 0.7-0.9sqm / person	155-200	1.2 x min 30 + circ (50) + exhibitions (60)

Fig 79: Accommodation list compilation (progress)(Author).

5. Museum (choccolate: client).	Offering a history and brief explanation of the client: HONEST chocolate. Their journey, vision, mission, history of how they came to be. Seating, information panels : scattered along cirulation corridors.	Based on the mixed standing and seated sqm requirement: 0.7-0.9sqm / person	155-200	combined with building museum to an extent
Staff/ employees/ services				
1. Offices	Equipment: tables, chairs, computers (open plan / layout orientated): 'hidden': out of main view, yet still enjoying view of the building / surroundings.	Dependant on type of space: varies from 5.5m2 - 9m2 per person	120	8 pp x min 15:
	The spaces included per person is dependant on the type of space, which includes: common rooms, meeting rooms (if necessary), open workstations (other: 16m2)			
Additional				
Staff kitchen	Kitchenette and lounge space available from staff		20-25	N/A
storage	Storage rooms varying from cleaning supplies, linen, product storage or staff storage		7-8	
restaurant kitchen	Restaurant / café space: patron space, circulation, seating, various seating: booths, single tables, large tables etc.		100 + 60	
Cleaning and sterilisation room	Applicable to the laboratory space		16	
waste disposal	Applicable to the café / restaurant space		10	
linen storage	Storage rooms varying from cleaning supplies, linen, product storage or staff storage		5	
genereal storage	Storage rooms varying from cleaning supplies, linen, product storage or staff storage		5	
Generator room	Power generatators to power machinary and cool storage units in the event of power loss.		10	
Cold storage	Cold storage for café, kitchen, laboratory or end of chocolate production use		5	
Dry storage	Dry storage space housing other ingrediants, products and neccessities		5	
board room	Meeting rooms for staff, people of interest, investors etc.		20	
lockers and changing	Applicable for staff (if necessary for spa/ wellness centre).		24	12 for (12x2)

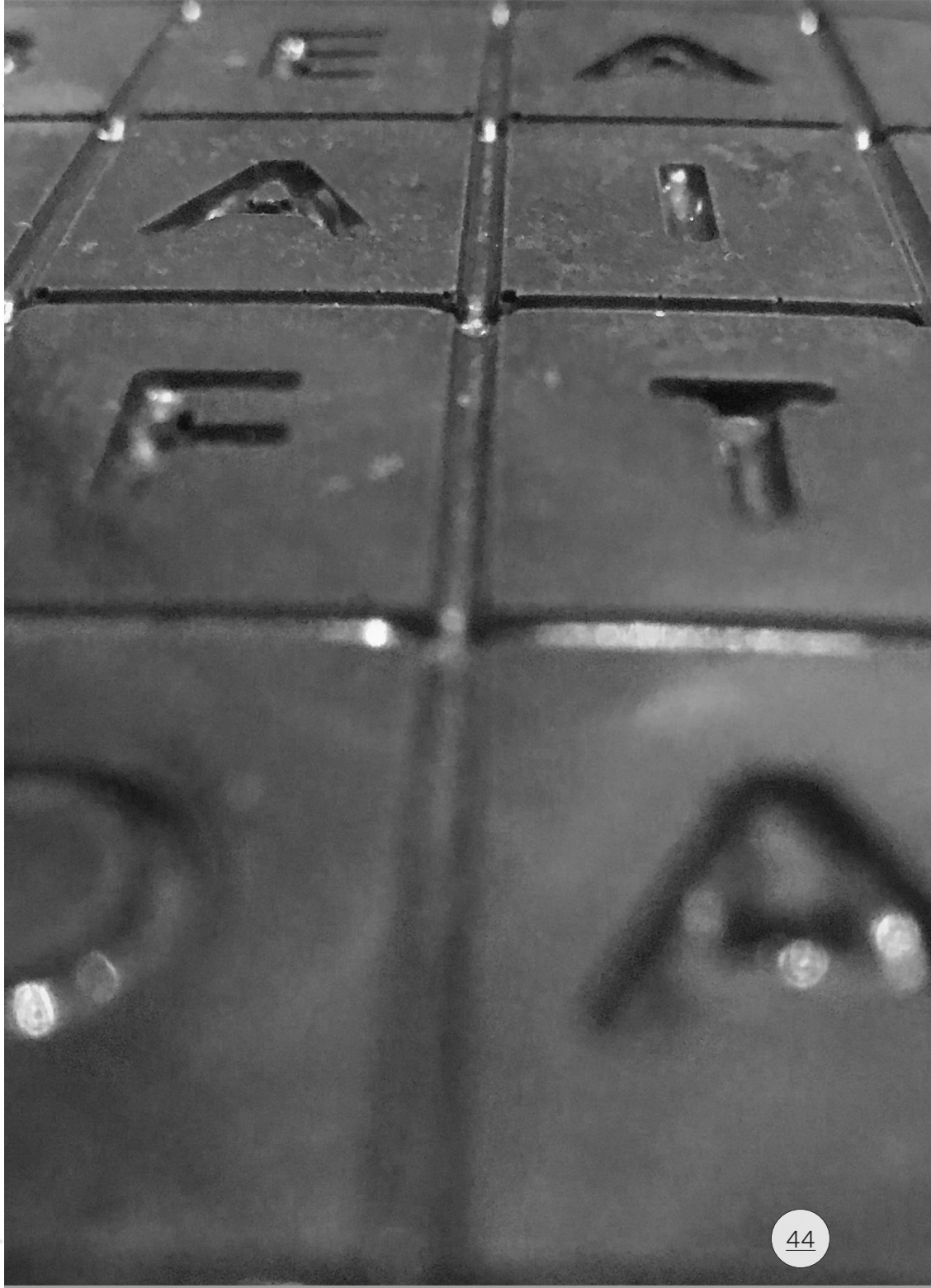
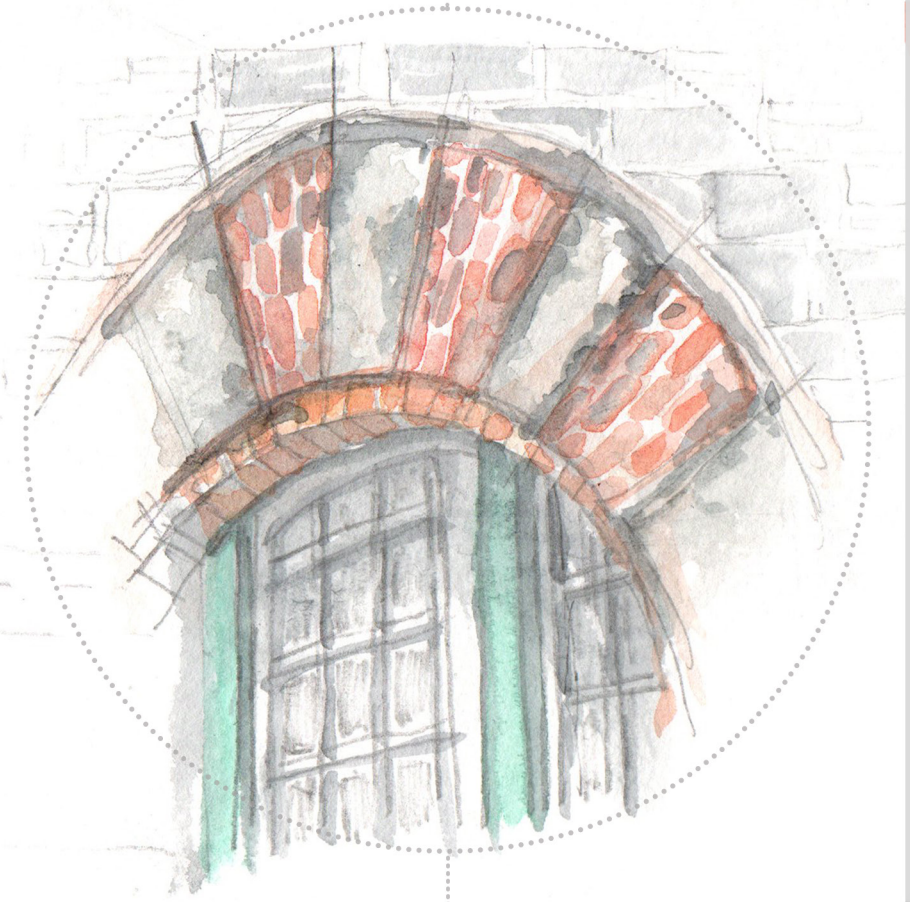
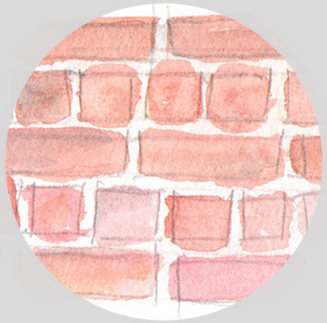
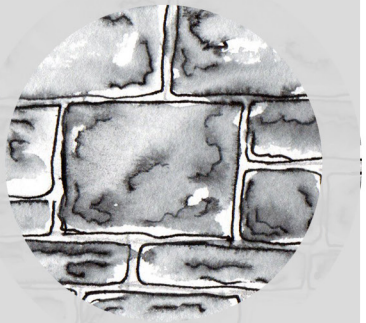


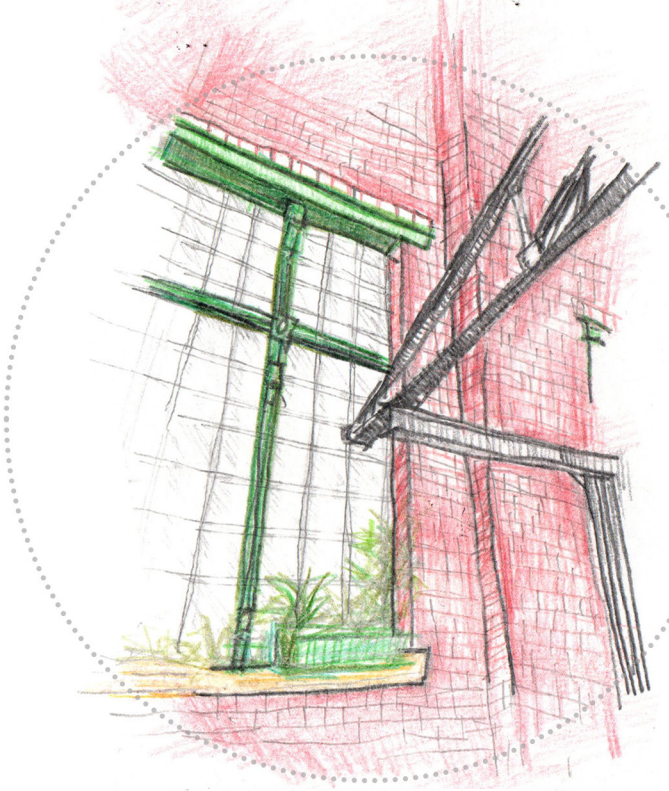
Fig 80 : Honest chocolate slab lettering and details - photograph (Author).











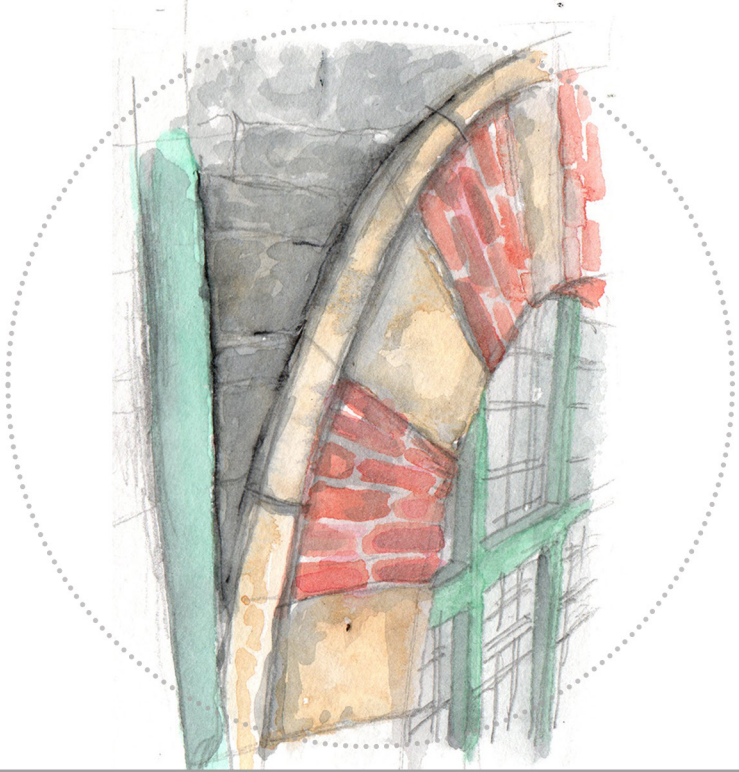


Fig 81-86:left: Southern facade arch window in watercolour, Middle top: English bond brick, middle: stretcher bond, bottom: Table mountain stone. Right top: steel and brick connection, bottom: arched window detail(Author)

3.5 Conclusion

The identification of significant historical attributes relevant to the development of a design strategy is crucial. The insight imparted by the multi-layered analysis provides awareness of influencing factors that make up the urban environment of Woodstock. It also aids in identifying existing elements on site that could affect the design approach with consideration towards design characteristics and details present on the existing Old Castle Brewery that must be preserved and protected.

Chapter 3 identified various influences on the site and the main historic building. Certain elements, such as the influence of The Burra Charter on the developing design approach, were highlighted to showcase the importance of carefully considering historic and culturally significant buildings for adaptive reuse. Furthermore, the context analysis provided the necessary information to consider for developing a new identity rooted in an evolving theoretical approach. In the following chapter, the theoretical stance will be exemplified. Building on the fundamentals identified in chapter 3, the theoretical approach focuses on incorporating ethical indulgence through prosthetic architecture to create a new identity in addition to the historic.

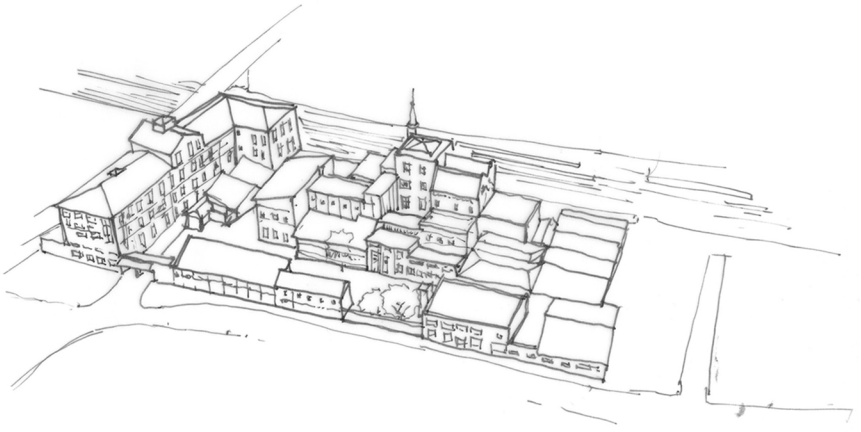


Fig 87 : Aerial drawing of the Old Castle Brewery complex (Author).

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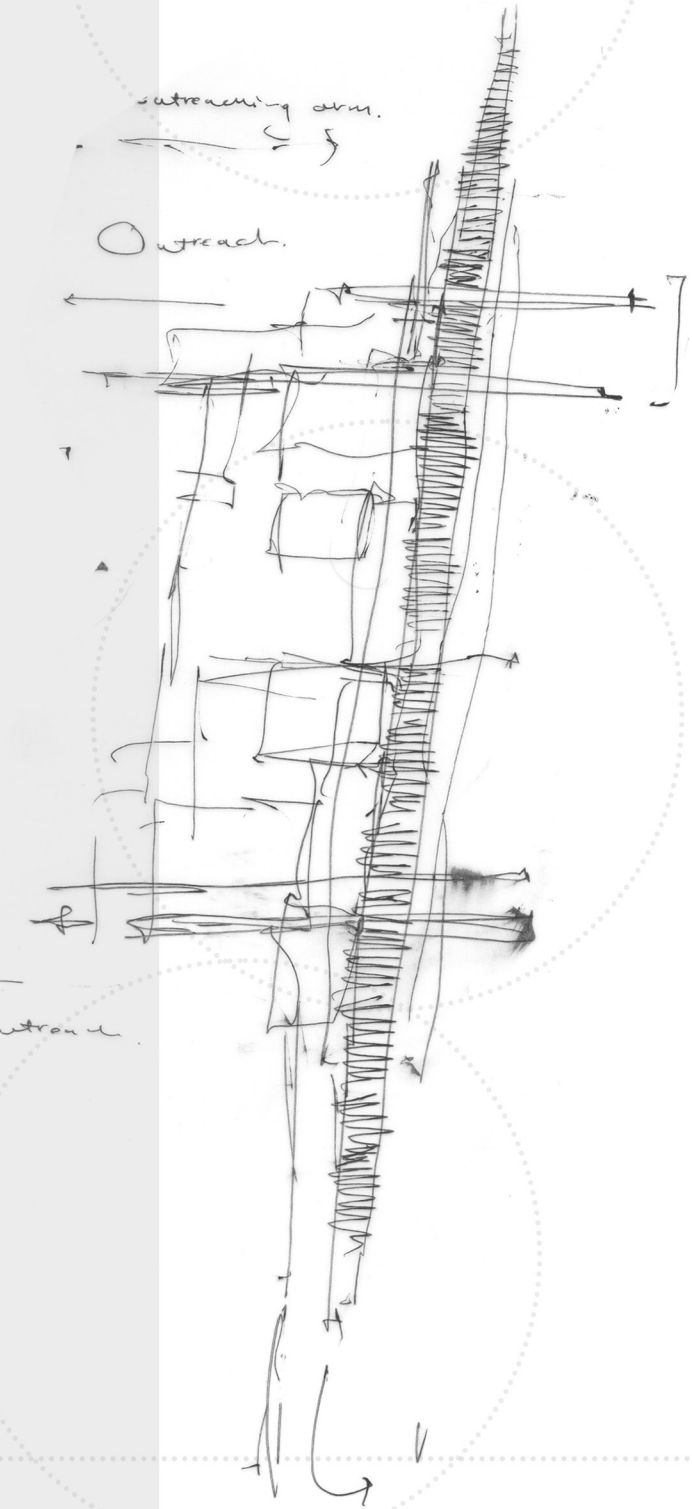
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4. Exposition

Introduction

Location, the choice of site and the intention of the building program served as the first identifiers of a theoretical approach. As established in chapter 3, the building has a particular heritage stance that not only offers the guidance and protection of external influences, such as The Burra Charter but also provides a base for creating a new identity to evolve with its milieu. The specific characteristics identified in the previous chapter outline the initiation of a design strategy, intreating one to act with ethical consideration towards the historical and cultural significance of The Old Castle Brewery. However, to create a new identity capable of urban renewal, one must consider a radical change to the existing state of the building's character. Albeit, one must not forfeit ethical consideration within creative indulgence. Therefore, the objective of the theoretical approach is to encompass the concerns set out in chapters 1 -3 while establishing a strategy to be applied through design intervention and adaptive reuse.

Chapter 4 explores and defines ethical indulgence, radical adaptive reuse, and urban renewal with prosthetic architecture as a methodology to invite indulgence. Furthermore, the chapter sets out the implications of prosthetics, medically and within architecture, defining the role of venturesome and augmented prosthetics, in terms of the pre-established layers of ethics.

Fig 88: Concept diagram of a prosthetic exploration (Author)

PART 1:

4.2 Indulgence

Indulgence refers to the practice of indulging, the yielding to a desire. Being indulgent can also refer to the allowance made for oneself to follow one's will (Collins English Dictionary, 2022: online). To gratify or satisfy feelings, desires, and inclinations. Usually, the word has a negative connotation, implying recklessness and lenience. Nevertheless, when allowing oneself the pleasure of one's own will, the decision to indulge is based on a predicted positive outcome. If the intended outcome seems negative, the act of gratification should not be engaged. Adverse outcomes are the result of over-indulgence and greed.

Indulgence is often associated with pleasure; depending on the context, indulging in pleasure usually has a negative connotation. Similarly, in architecture, connotations of pleasure are typically seen as deleterious, specifically concerning the previously mentioned 'pleasure island' typology. 'Pleasure islands' are regarded as synonymous with hedonism. It is seen as a place where one would indulge in the promise of freedom and the pursuit of pleasure. However, the promise of indulgence is gainsaid with the looming threat of consequence and eventual peril. This typology can be compared to the story of sirens in the epic poem by Homer, *The Odyssey*. In which the mythical creatures lure sailors to their death through hypnotizing songs that promise pleasure and indulgence (Bowen & Carnevale, 2021: online). However, the satisfaction of these desires is seen as an over-indulgence or overcompensation of gratifying pleasures that is eventually met by retribution to 'balance the scale'.

Conversely, indulgence and gratification do not have to be gained through eventual retribution. If indulgence is governed by a system that draws on the propensity and allure of pleasure yet removes the punishment typically attributed to hedonism and indulgence, one can re-establish the promise of a 'pleasure island' to be associated with approbative outcomes. The altered 'pleasure island' typology becomes an Epicurean approach—an approach devoted to the ethical delight and indulgence of pleasures without the fear of entrapment.



Fig 89: Idulgence abstracted as a circular process - caving it on itself (Author).

The word Epicurean relates to Epicurus, one of the foremost philosophers of the Hellenistic period (O'Keefe, 2022: online). Epicurus developed multiple philosophical fields, including empiricist epistemology, materialistic metaphysics, and hedonistic ethics (O'Keefe, 2022: online). Epicurus regarded ethics as egoistic hedonism (O'Keefe, 2022: online). He stated that one's pleasure is of utmost importance and that anything else of value is merely a means of obtaining more satisfaction for oneself (O'Keefe, 2022: online). Yet, he recommends a virtuous and abstemiously ascetic life with sufficient introspection as the best method of ensuring pleasure (O'Keefe, 2022: online). Therefore, he suggested that one must live with ethical consideration and further determined that the object of ethics is to establish the means necessary to reach and accomplish pleasure (Diano, 2022: online). He elaborated on his distinctions within pleasure, specifically kinetic and static pleasure, yet concluded that: "...pleasure is the equilibrium of the being with itself, existing wherever there is no pain" (Diano, 2022: online). He offers a solution to the 'pleasure island' typology. One can create a new 'pleasure island' typology by removing the fear of pain and including ethics in indulgence. Where an individual can be lured in with the promise of indulgence in pleasure and chocolate, yet does not have to pay a price of retribution but rather simply enjoy the 'fruits of the island'.

4.2.1 Indulgence in chocolate

Chocolate is regarded as synonymous with indulgence. With cravings that have become a part of people's daily lives—an ever-changing game of push and pull, to satisfy or deny. Consumers allow themselves to indulge, mainly when the act of indulgence includes nostalgia and familiarity (FONA, 2018: online). According to FONA, the Flavors of North America, International National Consumer survey of 2018, there are four base types of indulgence regarding food, with particular reference to chocolate. The four types of indulgence are classic indulgence, indulgence as an experience, affordable indulgence, and healthy indulgence (FONA, 2018: online).

Classic indulgence refers to sinful decadence (FONA, 2018: online). Indulging oneself in an unhealthy helping of decadence with no guilty conscious. Alcohol and dessert, specifically chocolate, are usually guilty pleasures (FONA, 2018: online). Indulgence as an experience is the delight of a moment usually related to specific events such as celebrations, going hand in hand with positive emotions, moods, and feelings (FONA, 2018: online). Affordable indulgence includes indulging in activities, foods or confectionaries that bring comfort or satisfaction without being financially crippling (FONA, 2018: online). Healthy indulgence is the enjoyment of an indulgence with the same flavour and satisfaction; however, presenting itself as a healthy alternative, consumed without the guilt of indulging in something unhealthy. The most common indulgent type, according to FONA, is classic indulgence. Periodically indulging cravings, without guilt, as a treat to oneself. Consumers explained they either deserve it or earned the indulgence, allowing themselves to feel good and uplift their mental state. Their indulgence remains positive, including portion control and over-indulgence avoidance (FONA, 2018: online).

4.2.2 Indulgence in architecture

What counts as indulgence for certain architects can be the norm for others. The definition of indulgence in architecture is subjective to the profession and the professionals involved. However, one can look to architecture history to identify instances of indulgence or over-indulgence that impacted the industry.

Considering past styles, one can consider Rococo architecture as a lavish example of architectural indulgence. This theatrical design style found inspiration for its aesthetic in music, furniture, and art (Masterclass, 2022: online). Characterised by colourful pastel palettes, curves and asymmetry, this architecture style indulges nearly every whim and inclination (Masterclass, 2022: online). Although popularised and generally applied throughout France as the style progressed, the intent of Rococo architecture served as the indulgence of lavish living and portraying it to the public.

More contemporary examples include the projects of Frank Gehry, a Canadian-born architect. His distinctive indulgent style and, in most cases, over-indulgence cements his legacy in the architecture industry. He is characterised by free-form sculpture and undulating shapes in building design (Britannica, 2022: online). His buildings are recognised by their extreme curves, materiality, and assembly. Gehry is a predominant figure of deconstructivism, thriving on freedom and indulgence. A sought-after architect to clients of large budgets to entertain any whim, will or inclination. His work left a grand impression of what over-indulgence in architecture refers to. It showcases the effects of freedom and the practice of indulgence in free-flowing shapes that do not follow the strict classical aesthetics and the union of form and function.

Rococo architecture and the work of Frank Gehry present both freedom and unhealthy forms of indulgence in the architectural profession. Both are considered unhealthy forms of indulgence as they do not fulfil an ethical role. Rococo architecture is the peak of self-indulgence that flaunts wealth and access, with no regard for those who cannot afford a lavish or comfortable lifestyle. Similarly, both examples gratify their desires while indulging in the pleasures of their self-interest. However, there is an alternative in architecture. Other methods of design can include aspects to promote healthy indulgences. These design methods are rooted in indulgence that motivates and encourages ethical outcomes and behaviour. It is an architecture sourced from ethical considerations to mindfully integrate ethics into the design.



Fig 90: Rococo interior, Court Chapel, Würzburg Residence, Germany (DeCombe, 2021: online).



4.2.3 Indulgence in Charlie and the Chocolate Factory

Another example of indulgence in architecture can be found in the creative trigger of Roald Dahl's book, *Charlie and the Chocolate Factory* (1964) and the recent film adaptation (Burton, 2005). Not only does the factory include the blatant indulgence of chocolate, but the architecture stretches into indulgence almost to the point of absolute chaos and absurdity. As presented in the 2005 Tim Burton film adaptation, the exterior seems modest and expectantly like a factory; however, indulgence is evident once the interior is breached.

The showcased interior spaces include a chocolate river, waterfall, nut room, invention room, a seemingly endless and transparent elevator shaft, a tv room and a variety of rooms only mentioned and not showcased. The spaces are translated from fantasy into reality yet aim to contain the sense of fantastical enchantment. As described in the book, other rooms include a fear tunnel, presenting the passing individual with their worst fear, and a testing room where new products developed in the inventing room are tested by Oompa-Loompas (Roald Dahl Wiki, 2022: online). A lick-able wallpaper wall consisting of various fruit flavours to be tasted and a stretching room mainly for stretching chewing gum (Roald Dahl Wiki, 2022: online). These interior spaces are the epitome of spatial and fantastical indulgence; coupled with chocolate, Wonka's factory becomes the beacon of fun and indulgence. Willy Wonka being the king of indulgence himself.

Although based on fantasy, Wonka's factory can be reinterpreted as an inspiration for non-fictional architecture. Wonka strays from the traditional, inviting any willing enthusiast to consider other, quite radical interpretations of known functions, allowing explorations of and within space, not limited to conventional function organisation. Wonka challenges conforming ideals, not only straying from fixed functions within a chocolate factory but also challenging what standard functions can look like. He contrasts the interior and exterior completely.

Fig 91: A glimpse into the chocolate making process (Author)

Creating a multi-dimensional interior within a large-scale and multi-level exterior shell, conveying traditional characteristics of factory design. The exterior shares design features of industrial architecture, particularly 1920-1930's industrial architecture, as the book is set roughly in the 1920s. Featuring a minimalist aesthetic, careful not to indulge in ornamentation and flourishes that could give away the functions inside of the factory.

Willy Wonka's philosophy of indulgence can be utilised as inspiration to develop, understand, and challenge the expectations of a chocolate factory. Wonka challenges traditional factory anticipations, limitations, and possibilities. His challenging mannerisms and personality make him quite ambiguous. One cannot tell if he is considered 'good' or 'bad'. Throughout the film, he entertains five children in and about his chocolate empire, eliminating them as worthy heirs as they progress through the tour. Blimey, a collection of reviews and explanations of movies and books curated by an anonymous writer, suggests that Wonka set traps for each child as punishment for their personification of 'mortal sins', such as greed, pride, idleness, and gluttony (Blimey, 2022: online). He is seen as the villain, seemingly entertained by the trapping and punishment of the four children. However, at the film's end, he gives his empire to Charlie Bucket, letting go of vengeful acts on children and showing compassion towards the Bucket family. He is not entirely a villain but also certainly not a hero (Blimey, 2022: online). This shift in behaviour, with the employment of the cacao-loving Oompa-Loompas, brings his sense of ethics into question. This shift in awareness initiates a greater interest in the ethics of chocolate-making, indulgence, and the effect thereof on an architectural venture.



Fig 92: Willy Wonka and his visitors to the factory (Pinterest, 2022: online, adapted by author).

PART 2:

4.3 Ethics & Indulgence

4.3.1 Defining Ethics

Ethics can be defined as a moral philosophy (Singer, 2022: online). It outlines the discipline of what is considered morally right or wrong, good or bad and is often understood in terms of a system of principles and values (Singer, 2022: online). Moral ethics is subjective. While it is assumed that there is common agreement about pivotal aspects, it could just as easily appear as if each person's moral compass points in its direction, dictating what they believe to be morally right or wrong. Despite individuals differing according to their upbringing, beliefs, and religion, the larger society generally tends to conform to what is accepted as right or wrong. Ethics encompasses fundamental issues like practical decision-making, thereby playing a crucial role in determining the standard and nature by which people's actions can be judged as right or wrong (Singer, 2022: online).

According to Peter Singer, a Bioethics professor, ethics can be traced back to mythological origins. He states that ethics originated when humans reflected on or started to reflect on the best method of living (Singer, 2022: online). Where reflection arose from customs within a society, developing ethics into moral codes. He elaborates that morality is invested with the power of divine origin, stating that it could be the main reason for accepting moral law. Attributing divine origin and religion to morality, where some even suggest that there cannot be morality without the impact of religion (Singer, 2022: online). However, not everyone is religious and follows a code of ethics or morality that contributes to divine revelation.

In a society, there are various social groups. Within these groups, social life is commonly shared to function. However, this social life requires behavioural constraints (Singer, 2022: online). The constraints are to the social groups' benefit, health, and safety to function and cooperate. As Singer further explains, these types of social interactions can be observed and paralleled to non-human behaviour, specifically groups such as wolves, baboons and even dolphins (Singer, 2022: online). Singer acknowledges the willingness of these animals to help and sacrifice for each other, with reciprocity, and kinship, indicating that these are the universal and fundamental human ties forming a bond (Singer, 2022: online). Strengthening these bonds results in friendship and loyalty that is often accompanied by an assistive obligation (Singer, 2022: online). Friendship, culture, religion, and other beliefs are the core influencers of human morality. While many believe there are no universal morals, avowing that the varying differences become too great for a single moral standard to be generally accepted (Singer, 2022: online).

Nevertheless, Singer insists that although significant differences exist and influence how morals and standards are perceived, interpreted, and accepted, the concern for reciprocity and kin is widely considered good in various societies (Singer, 2022: online). He states that most societies also accept harmful inclinations as morally wrong and that harming the social group is not considered ethical (Singer, 2022: online). The 'wrongdoing' would have consequences, traditionally theorised as normative ethics, where each action would be judged on its consequence to determine the ethical underpinning — judging the outcome of the action to decide whether it can be accepted as ethical (Singer, 2022: online).

4.3.2 Ethical Indulgence

As mentioned in previous sections, the concepts of ethics and indulgence are multifaceted and relatively complex. Nevertheless, they have traditionally been seen as standing in opposition to each other. Despite the dissenting voices of Epicureans over the ages, western consciousness is still under the sway of the cautionary tales warning unsuspecting pleasure-seekers against the 'fall' associated with giving in to pleasure. Consider the ridicule associated with becoming a donkey on Pinocchio's pleasure island or the fatal consequences of giving in to a siren song. However, the mere thought of an inner-city chocolate factory seems to hold out the possibility that this traditional disassociation between ethics and pleasure is not set in stone. If ethics and indulgence are placed in

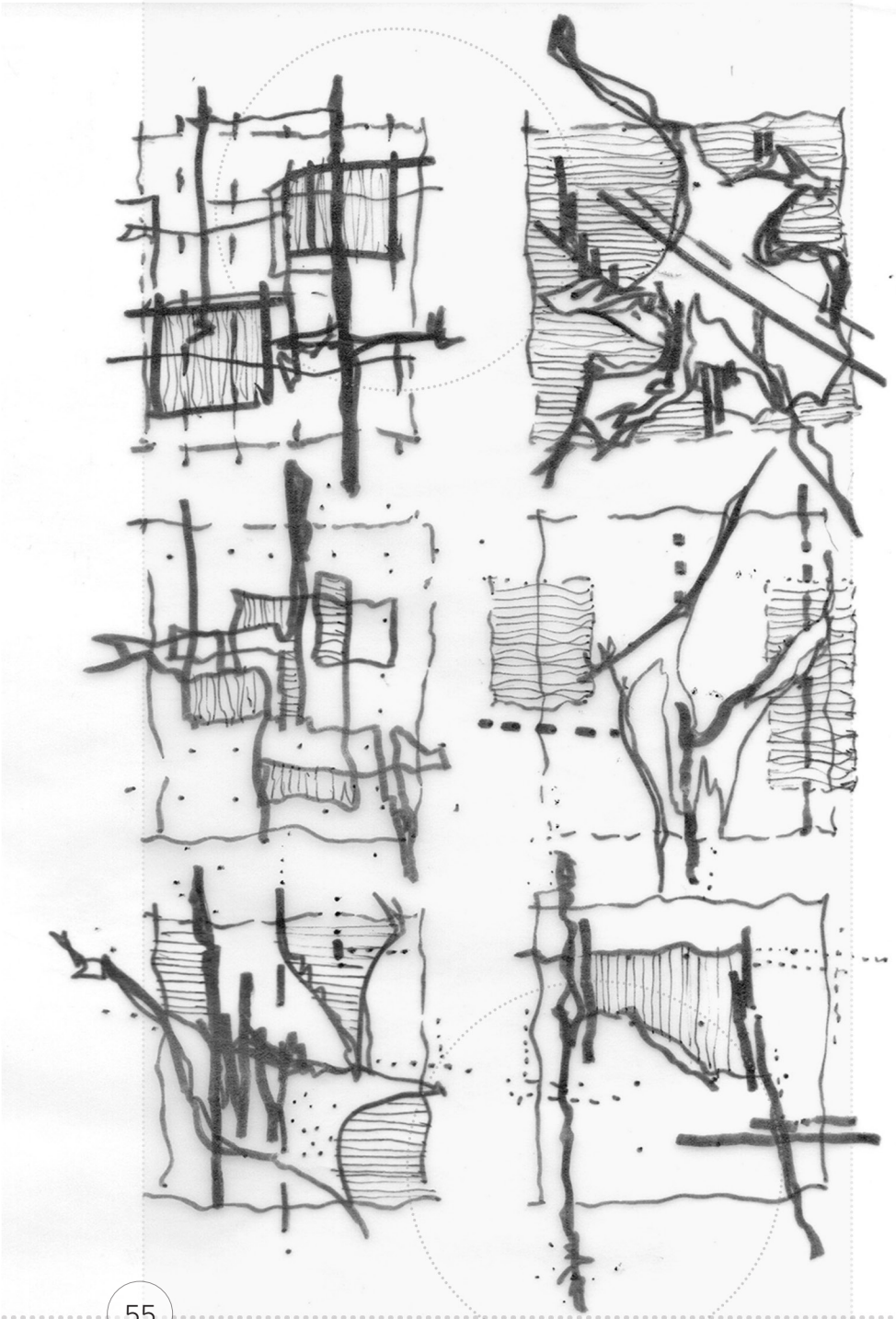


Fig 93: Developing various frameworks to 'contain' indulgence (Author).

relationship, one could consider that ethical indulgence can be defined as the discipline of principles and values applied or implemented when yielding to desire or satisfying inclinations. Thus, it would be possible to formulate restrictive guidelines for ethical indulgence, offering a framework for edifying gratification. To be indulgent can be without guilt if there is a structure composed of ethical disciplines associated with said indulgence. The structure is not meant to limit indulgence or hinder it but to ask for reflection and consider the consequence of any action.

As previously mentioned, ethical behaviour differs for varying social groups, professions, and cultures; however, some universal ethic codes or guidelines are generally accepted. Professional codes of conduct are included in the accepted universal ethics, stating the method of conduct that is considered ethically correct or good within a professional environment. In architecture, there are also codes of conduct. This code of conduct sets out expectations and limitations for architectural professionals' work and creative ethics. Similarly, codes of conduct are enforced within the architectural community regarding design, construction, buildings, and history. In the architectural profession, certain ethics regarding adaptive reuse projects are acknowledged as good and moral design toward the historical and cultural importance of a building. Examples of these implemented codes of ethics in adaptive reuse may include the Burra Charter evaluation guideline, which outlines an ethical approach to adaptive reuse. The ethics in these guidelines concern the historical, cultural, and sentimental value of built projects. It is concerned with the impact people have on the building, its influence on the community, its environment, and the nostalgic value the building encompasses.

In an architecture of ethical indulgence, ethics could be considered as being concerned with conserving what already exists. In contrast, indulgence offers freedom to explore new possibilities not limited by traditional conventions. Indulgence in architecture can be approached similarly, as explained in section 4.2.3. Wonka's approach to his chocolate factory includes complete indulgence, Rethinking traditional spaces, functions, layout, and general aesthetic. He redefines what a chocolate factory can be—retaining the factory exterior, although large-scaled, with high vertical elements and a great massing, that seemingly blends into the surrounding urban environment. The exterior of his factory is retained to seem somewhat time specific, only hinting at possible interior functions, yet remaining without

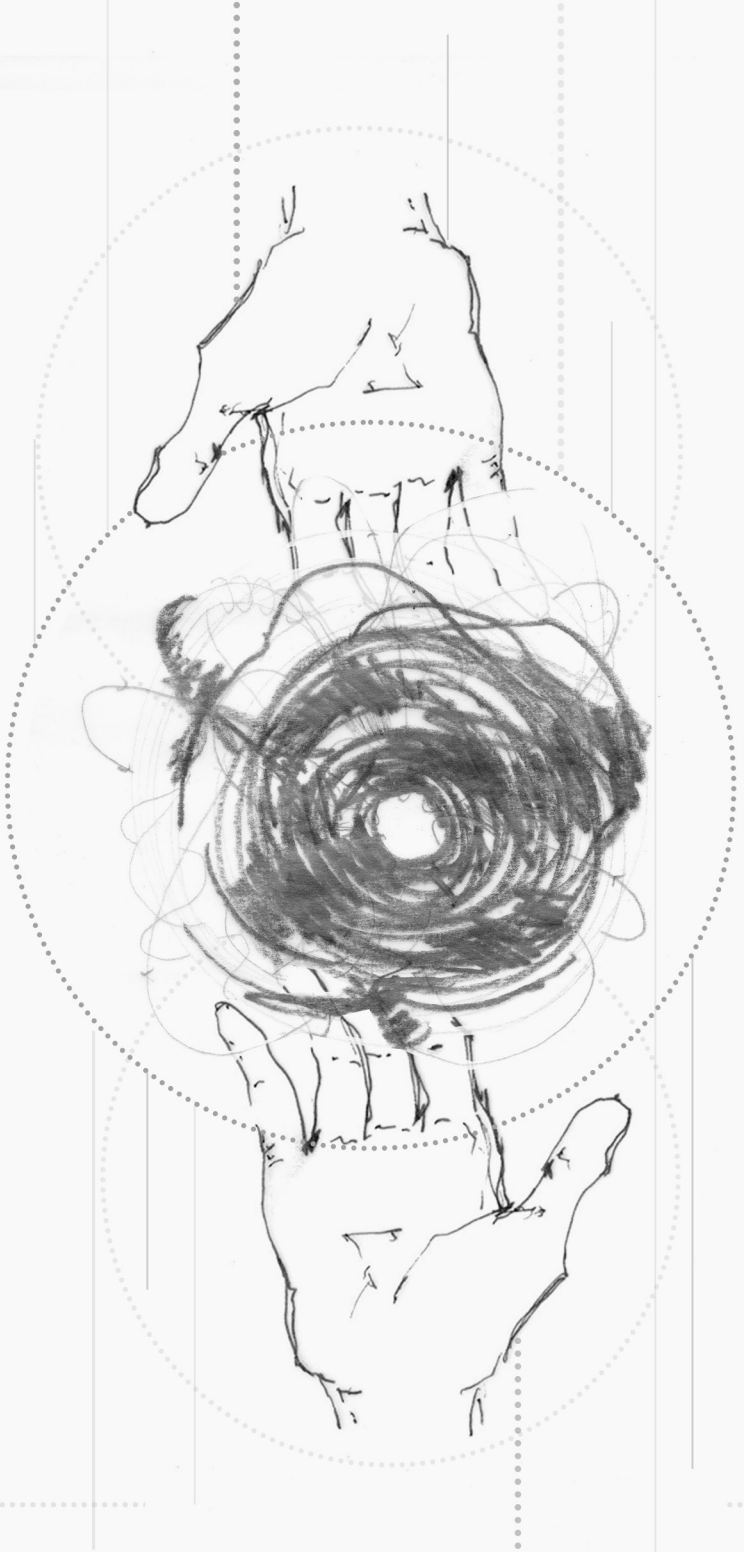


Fig 94: Transferring / handling indulgence- chain of production (Author).

grand indulgent ornamentation and lavish expressions. Yet, in a contemporary milieu, it is not obligatory to remain without indulgent additions to the exterior. However, the addition should not cause significant destruction to the existing building's façade.

Despite it being hard to script precise rules of engagement, an architecture of ethical indulgence implies a general awareness of the need to balance pleasure with ethical behaviour to ensure the most potential for urban gratification. An ethically indulgent approach to design offers many possibilities. However, since ethical indulgence can be applied to different aspects of an approach to architecture, various parts of ethical indulgence must be investigated to develop these strategies. Indulgence creates a more significant link between the satisfaction of following one's will and the connotation of chocolate and classic indulgence. Ethics remains complex and diverse, specific to each aspect of a project. Therefore, the next section will formulate a stance toward an architecture of ethical indulgence in terms of three main categories or layers. These layers include ethics in chocolate production, ethics regarding adaptive reuse and heritage applications and ethics within the urban environment.

PART 3:

4.4 Ethical layers

4.4.1 Ethics in chocolate production

Ethics in the manufacturing process of chocolate is questioned constantly, and rightfully so. There have been many instances of investigated child labour, human trafficking and even slavery concerning the harvesting of cacao (Sourcetrace, 2022: online). Chocolate is mainly sourced from tropical climate zones in Latin America, Western Africa, and Asia (Sourcetrace, 2022: online). More than 70% of cacao originates in Ghana and the Ivory coast. Source trace reports that the demand for cacao, at a very cheap rate, drives these countries to harvest and export as much cacao as possible, turning to child labour to keep up (Sourcetrace, 2022: online). Unfortunately, even though the employment of children in hazardous conditions is public knowledge, very little is done to curb the issue (Sourcetrace, 2022: online). Well-known chocolate brands are

complicit in this trade, despite their signage of the Harkin-Engel Protocol, a pledging protocol created to eliminate child labour in its worst forms in manufacturing chocolate (Forage and sustain, 2021: online). Big names that voluntarily signed this public-private agreement include Nestlé, Mars, Hershey and Mondelez, South Africa's largest confectionary enterprise (Forage and sustain, 2021: online). However, even by the signage of this agreement and the pledge to avoid cacao produced through child labour, it is estimated that child labour use increased in the last ten years by an estimated 14% (Forage and sustain, 2021: online).

The increase is due to the large brand companies' inability to identify which exact cacao farms their cacao is sourced from (Forage and sustain, 2021: online). However, third-party establishments aim to aid in this crisis, offering to inspect cacao farms to certify them for ethical trade purposes (Forage and sustain, 2021: online). Even though these organisations mean good, they simply cannot keep up with the growing global chocolate network. Therefore, it remains up to the consumer to choose the products they support. This requires knowing what big companies are involved in and whether they are ethically producing chocolate. The most effective way of knowing one's chocolate is ethically produced may be to support local artisanal chocolatiers. Smaller businesses can source their cacao beans from specific sought-out farms. Artisanal companies can confidently advertise that their chocolate is an ethical bean-to-bar indulgence made with cacao from certified cacao farms. Honest Chocolate, the client for this project, prides itself on producing ethically sourced chocolate locally. This small bean-to-bar artisanal chocolate business, based in Cape Town, advertises its use of a positive production chain. They reflect on their impact, contemplating various possibilities and ensuring that the consequences of their actions to produce chocolate are ethical and not harmful to individuals or the environment. They believe in fair and organic sourcing of local ingredients as far as possible, handcrafting chocolate with quality products as the demand requires.

Furthermore, they pride themselves on personal accountability to create thoughtful artisanal chocolate with a positive impact (Honest chocolate, 2022: online). Their leading supplier of cacao beans is Kokoa Kamili, a cacao farm based in Tanzania. The owners of Honest Chocolate visited farms in Tanzania to find a cacao supplier that matched their ethical stance. Honest Chocolate has forged a close working relationship with Kokoa Kamili for



Fig 95: Cacao is tainted by unethical habits (lubovchipurko, 2022: online, adapted by author).



Fig 96-97: Photocollage compiled and adapted from photographs shared by Kokoa Kamili. These imgaes show their cacao beans, employees and Tanzania (Kokoa Kamili, 2022: online).

over three years, ensuring an ethical approach to cacao farming, harvesting, and sourcing to minimise the overall environmental footprint (Honest chocolate, 2022: online).

Although indulgent and enjoyable, chocolate-making often hides the gruesome ethical mismanagement overlooked by large chocolate manufacturers. To disregard ethics in the manufacturing process of chocolate is a great disservice to the sweet treat and the 'innocent' indulgence thereof. Chocolate making is an art, especially artisanal chocolate. That is crafted with care to ensure a thoughtful blend of flavours to impact people's lives positively. Chocolate-making ethics should be considered a contribution to the great art of cacao-*poiesis*.

Ethics in chocolate can also indicate reverting to the original use of chocolate. To reflect on its origin and original use and to respect the chocolate for its historic properties. This, of course, refers to the spiritual and meaningful use of chocolate, initially invented by indigenous folk in Mesoamerica (Forage and sustain, 2021: online). These communities utilised chocolate in a simplified liquid form for healing, religious ceremonies, and spirituality (Forage and sustain, 2021: online). Chocolate has become a guilty pleasure or a sinful decadence, disregarding the original healing intent when consuming chocolate. The industrialisation and consumerist approach to chocolate manufacturing and distribution has stripped chocolate of its healing properties and ceremonial value, wrapping chocolate bars in plastic that further pollute the earth instead of celebrating chocolate for its spiritual values. Some values or benefits include a connection with one's spiritual guides and wisdom, heart openings, strengthening one's connective feeling to one's body and the enrichment of clarity and creativity (Forage and sustain, 2021: online). It is time that chocolate is appreciated more responsibly and ethically, retracing the ancient ways this natural resource has enriched human existence. To achieve the responsible use of chocolate that is reminiscent of its historic properties, one can turn to its contemporary method of application. Chocolate spas offer various forms of chocolate therapy that aim to ethically reuse chocolate as it was historically celebrated within a contemporary milieu. Chocolate therapy utilises the by-products and waste produced in the process of chocolate making to reconnect people to chocolate and themselves, offering the benefits of relieving stress and anxiety to produce a calming effect and atmosphere. Therefore, by incorporating a chocolate spa within the adaptive reuse of a historic building, one can celebrate the history of the building and chocolate while incorporating ethics into the core functioning of the building's evolving identity.

4.4.2 Ethics in adaptive reuse

Esther Sperber, the founder of Studio ST Architects, asks, 'Is your building immoral?'. She suggests that it may seem ridiculous to ask, as buildings are not living entities with the capacity for empathy and judgement (Sperber, 2022: online). Sperber continues that buildings do not embody negative or positive ethics within their materiality, but it comes down to the architect and designer to include these elements (Sperber, 2022: online). She writes about ethics relating to design, stating that architects should refrain from detrimental design choices that cause inequality and cruel, harmful spaces (Sperber, 2022: online).

Nevertheless, buildings are designed by people to reflect the societal and cultural circumstances wherein they were built (Sperber, 2022: online). Architects have an important role in universal, accessible, and ethical design, to use energy-efficient, sustainable, and as far as possible, locally produced materials to minimise the environmental impact through construction (Sperber, 2022: online). This idea can also be applied to existing buildings. By adaptively reusing existing buildings, environmental ethics are already considered, as it minimises the impact of creating waste by reusing buildings instead of creating new structures and demolishing existing buildings. Sperber states that existing buildings are often demolished if they are referent to past traumatic events or if they do not convey the message of contemporary beliefs (Sperber, 2022: online).

However, she elaborates that historic buildings cannot be judged for their lack of contemporary value expression. The historic



Fig 98: Questioning ethics in adaptive reuse-removal of historic (Author).

building expresses the time, society, and circumstances in which they were built and cannot be destroyed for the sake of not expressing developing belief systems and modernised world views. Instead, the historic building could be adaptively reused to implement the moral or ethical shortcomings while retaining the historical content and emotional and sentimental resonant values (Sperber, 2022: online). Adaptive reuse has become the saving grace for historic or existing buildings.

Christopher Smallwood, an architect, defines adaptive reuse in his article "*The role of adaptive (re)use* "(2012). He identifies the complex and multifaceted meaning of the concept, stating that there is quite a variety of technical understandings and definitions of adaptive reuse. He describes adaptive reuse as installing a new and different program into an existing building (Smallwood, 2012: online). Smallwood elaborates that adaptive reuse has benefits, such as promoting historic preservation as rehabilitation, reconstruction, restoration, replication, or conservation (Smallwood, 2012: online).

Architects are tasked with preserving and renewing historic structures to create a balance between modern updates and historical conservation. Smallwood expresses that the most successful case of adaptive reuse finds a delicate balance between retaining and respecting the historic architecture and adding a contemporary architectural layer that provides future value (Smallwood, 2012: online). Therefore, guidelines are in place to aid designers in achieving the balance described. The Burra Charter provides the necessary considerations to contemplate when confronted with an adaptive reuse project. The 2013 Burra Charter guides the management, preservation and conservation of places and sites with cultural and heritage significance (Australia ICOMOS Burra Charter, 2013: online). The document outlines advice when faced with decisions regarding the design process within a heritage project—stating that there is value in conserving heritage structures. Cultural heritage sites enrich people's lives, connecting them deeply to the environment, landscape, and community (Australia ICOMOS Burra Charter, 2013: online). The document suggests that cultural heritage buildings are a historical record of expressions and identity, showcasing the diversity of time and communities (Australia ICOMOS Burra Charter, 2013: online).

These significant places hold past lived experiences, memories and meaning within their fabric, acting as a historical record of cultural identity. Specific sites are unique to the communities and are irreplaceable. The Burra Charter



Fig 99: 1930's photo of the Caste Brewery (Old Castle Brewery, 2022: online).

advocates a sensitive approach to places of cultural significance to preserve historic buildings while providing a functional program reminiscent of past meaning. The document includes a range of principles to be applied when assessing the cultural and historical significance of buildings and identifies which aspects should be conserved. Some of these principles include:

- Places of cultural significance should be conserved to retain their historical value – safeguarding the site from a vulnerable state.

- Visual and sensory settings should be retained – including the spiritual and cultural relationships that add to the site's significance (Article 8. Setting).

- Management, conservation, and interpretation should allow participation of all people and user groups with significant meaning and associations to the specific place (Article 12. Participation).

- Co-existence, specifically of cultural values, should always be respected, recognised, and encouraged, especially in cases of conflict (Article 13. Co-existence of cultural values).

- New work or additions are allowed where it does not disturb but respect the cultural significance – detracting from its appreciation and interpretation (Article 22. New work).

The Old Castle Brewery, built in 1901, is a site of great historical significance. It has become a beacon for locals in Woodstock, and it serves as the marker for the historic beach line. As mentioned in previous sections, the site consists of various buildings. Even the most historic building consists of various parts and additions. The proposed contemporary additions are situated on the northern side of the complex and the most historical part to the southern side. Researching the building and its complexities revealed a few historical photographs that showcase which parts of the building would be the most culturally and historically significant. By identifying the aspects of the complex of most importance, one can determine each component's value.

Regarding ethics, one can now consider the identified parts with the consequence of design actions to determine what would be detrimental or beneficial. The identified aspects, as outlined in chapter 3, includes but are not limited to distinct brickwork, an embedded cast iron steel structure, small, vaulted floor slabs, wooden and cast-iron fenestration detailing, and the use

of Table Mountain stone as a base for the building, a brickwork tower, turret and arched features. These elements comprise the most crucial exterior features that embody historical and cultural importance. These elements are to be considered with ethical reflection. The alteration of these elements may cause the existing building to lose its historical importance and cultural significance within the Woodstock urban environment.

4.4.3 Ethics in the urban environment

The urban environment comprises buildings, structures, spaces, and streets within the built environment designed to create a multidisciplinary physical setting for life (Urban Design Group, 2022: online). Through urban design, urban or city-setting spaces establish procedures, guidelines, and frameworks for successful development over time by various people (Urban Design Group, 2022: online). As these procedures are utilised, the urban environment develops and grows, sustaining life on an ever-growing scale. Various considerations in design are made specifically for urban design, as this field of design requires the efficient utilisation of space to accommodate large amounts of people to work and live in close proximity (Ellis, 2022: online). Although the urban environment is considered a single functioning composition, it comprises various components to ensure collaborative functioning. Each built part within the urban environment plays a role, specifically designed for the position it inhabits. However, not all components were considered with ethical, environmental, social, or political design implications. To explicate urban environments in terms of ethical layering, this section will focus on the ethical considerations within an urban environment, the impact of urban design within an ethical framework, and the comparison between ethical and aesthetical design.

Tom Nielsen, a Danish architect specialising in urban and landscape planning, writes about ethics and aesthetics in architecture, criticising the separation of ethics and aesthetics, as set out by Søren Kierkegaard, a Danish theologian, and Friedrich Nietzsche, a German philosopher. Nielsen explains the view of Kierkegaard, that there is a clear distinction between ethics and aesthetics (Nielsen, 2004: 23). However, Nielsen writes that the context for living in the

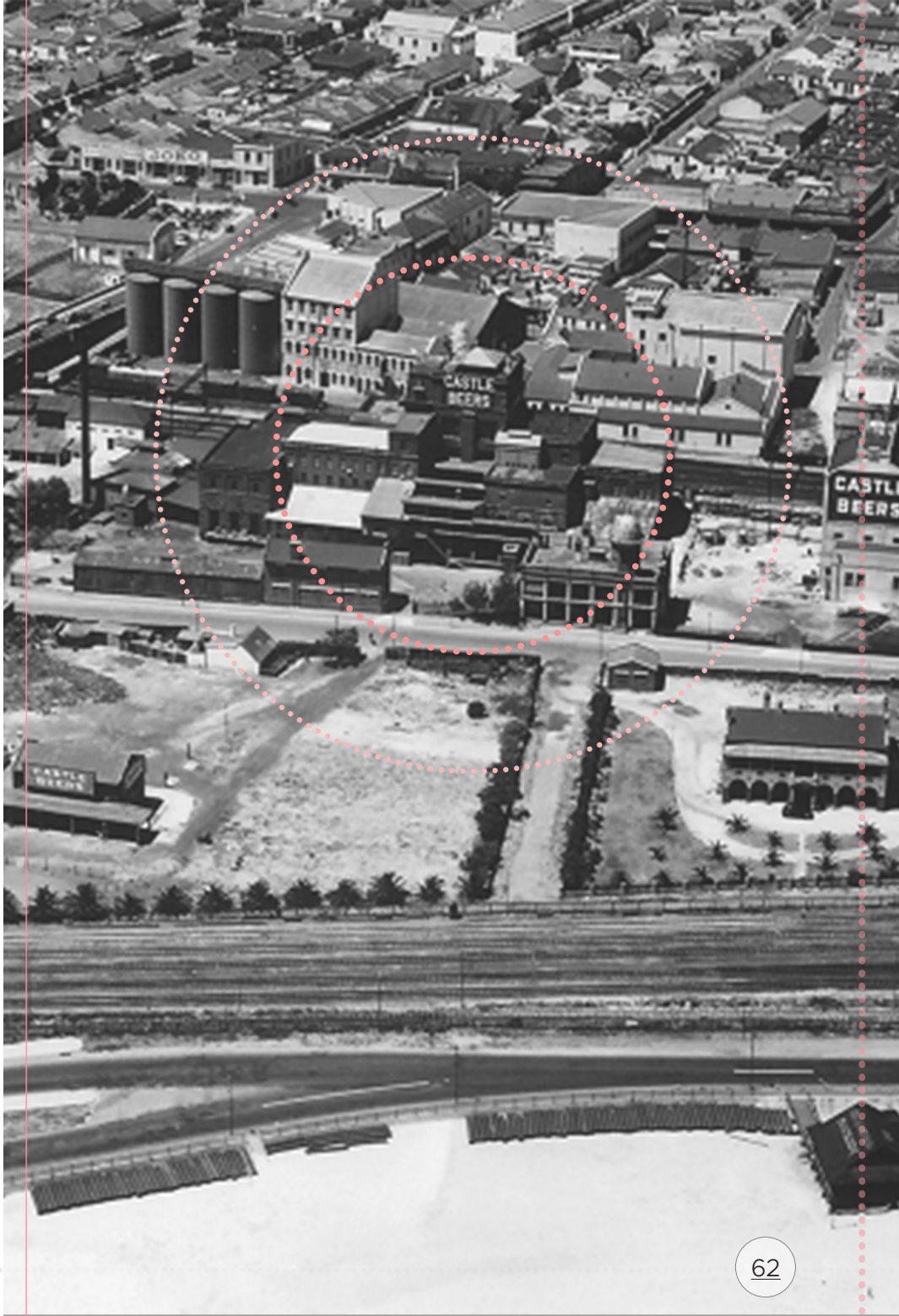


Fig 100: 1930's urban environment surrounding the site (Old Castle Brewery, 2022: online).



Fig 101:Four urban categories emerging from the urban fabric (Author).

work of Kierkegaard is characterised by 19th century Copenhagen and the urban regions thereof. Nevertheless, Kierkegaard commented that the abundance of consumer mass-production and flexibility contributes to the temporality and apparent shallow aesthetic choices (Nielsen, 2013: online). Kierkegaard's prioritising of ethics over aesthetics was challenged by Friedrich Nietzsche. As Nielsen elaborates, Nietzsche proposed the fusion of ethics and aesthetics, suggesting that one cannot categorise the two concepts of 'aesthete' or 'ethicist' as a distinct choice.

Nevertheless, both theorists have truth to their claims. Nietzsche proposes an adaptive approach to urban development. Suggesting that ethics and aesthetics should be questioned when identifying the context and 'premise of life' of an environment type, in this case, an urban environment. However, Nielsen writes that Kierkegaard proposes prioritising ethics to promote ethical earnestness in a modern-day developing urban environment. Nielsen further reports that he finds the Kierkegaardian methods of ethical prioritising more appropriate as an answer to modern-day eclecticism, aestheticism, and contemporary hedonism (Nielsen, 2004: 24). However, in context and relation to the ethical considerations for this project specifically, Nietzsche's approach is more appropriate. His proposal of a mutable adaptive reuse methodology considers the changing urban environment and its aesthetical properties. He suggests that one must consider the ethical and aesthetical implications when redeveloping a part of the urban fabric by questioning the 'premise of life' and the context of the particular urban environment.

The urban environment has a complex relationship with everyday ethics (Kärrholm & Kopljar, 2020: 102). The architects Mattias Kärrholm and Sandra Kopljar identified and developed four main urban ethics themes: new materialities, planning and sustainability, participation and communication and community building (Kärrholm & Kopljar, 2020: 102). The first theme is explicated as the ethical concerns arising from new materialities in the urban environment that addresses the role of change on the street level in everyday life (Kärrholm & Kopljar, 2020: 102). This theme relates to the role of street furniture in an urban setting and its underlying mental health impact. They explain the role of hostile urban interventions that cause harm to individuals who are unable to access or utilise urban installations due to their excluding nature (Kärrholm & Kopljar, 2020: 102).

The second theme, planning and sustainability, is concerned with the individuals' choice in the everyday that is either encouraged or limited by urban circumstances and demands (Kärrholm & Kopljar, 2020: 103). Individuals are given the choice

of living sustainably through urban interventions in their area. If urban planning incorporates necessary sustainable design options, co-existence and interaction are promoted within the individual to choose sustainable options (Kärrholm & Kopljar, 2020: 103). The third theme, participation and communication, concerns equality and justice, obtained through design dialogues and participation (Kärrholm & Kopljar, 2020: 103).

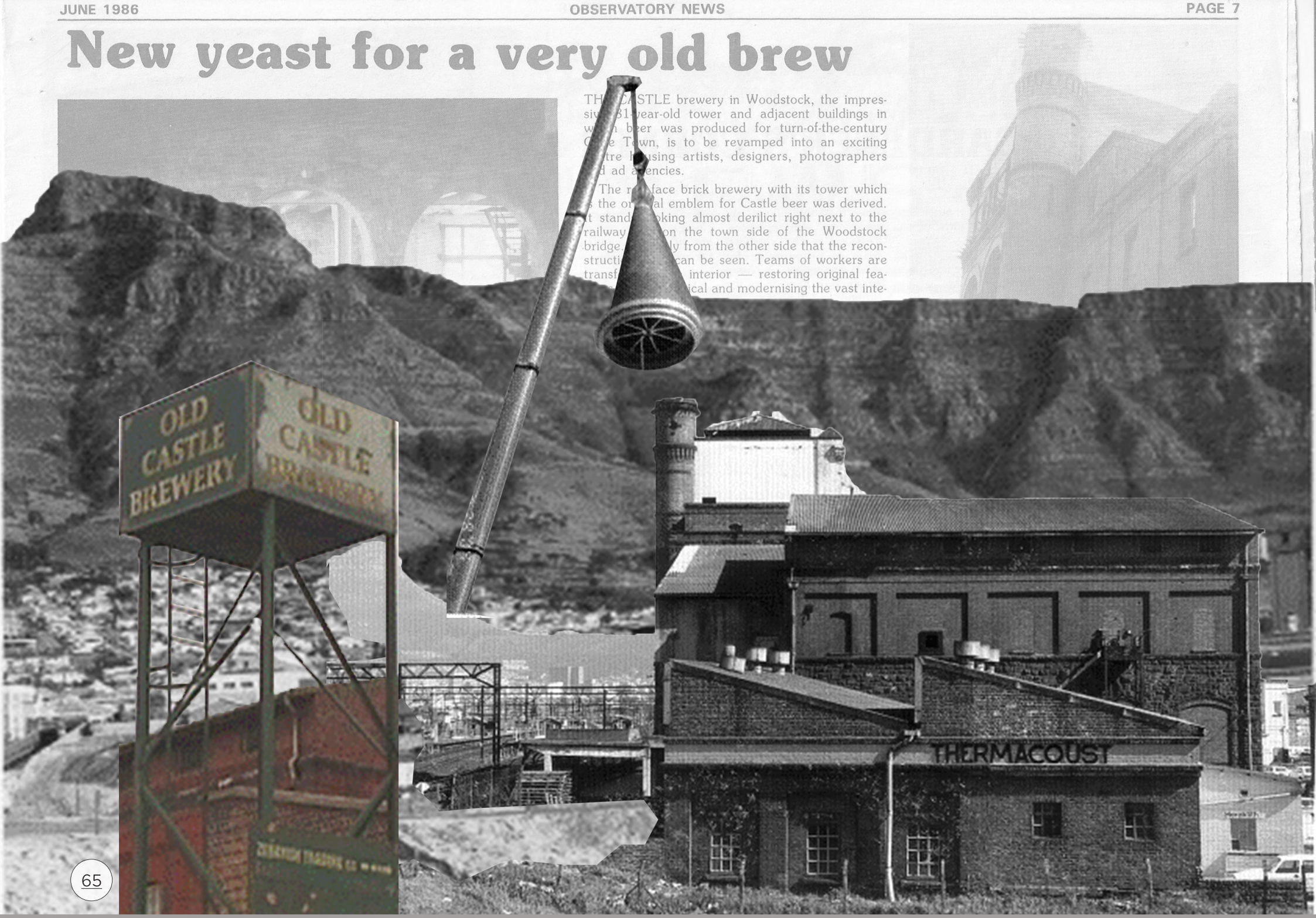
The authors identify the shortcomings in designs that can cause detrimental effects on social justice and equality, stating that lack of communication and participation in design, the community and the urban environment contributes to the problematic translational steps in development (Kärrholm & Kopljar, 2020: 103). Designers of the urban environment should encourage communication and participation through design and within the design process to enable clear translational steps towards urban development. The fourth theme, community building, refers to the considerations of existing ethicalities and the promotion of community development and establishment (Kärrholm & Kopljar, 2020: 102). This requires the consideration of community social life and everyday ethics in conjunction with public interaction and engagement.

All four themes can be identified in urban environments to either change the current theme circumstance or to implement new frameworks to counteract previous implementations. These themes make up the ‘premise of life’ mentioned by Nietzsche, as the identified categories are the systems and functioning of an urban environment. Therefore, considering the context and the identified four themes within an adaptive redeveloping approach becomes essential to the ethical and aesthetical impact on the urban environment. Consequently, as Nietzsche proposed, applying a mutable adaptive reuse approach that considers the four identified themes within their context and historical significance would be the most appropriate intervention method to change or radically transform a part of the urban fabric. The following subsections will show how this can be achieved through radical urban renewal and adaptive reuse.



Fig 102: Various layers of the urban environment surrounding the site - layered categories (Author).

New yeast for a very old brew



TH STLE brewery in Woodstock, the impressiv 31-year-old tower and adjacent buildings in w n beer was produced for turn-of-the-century C e Town, is to be revamped into an exciting tre using artists, designers, photographers d ad encies.

The r face brick brewery with its tower which s the or al emblem for Castle beer was derived. t stand oking almost derilict right next to the railway on the town side of the Woodstock bridge. ly from the other side that the reconstructi can be seen. Teams of workers are transf interior — restoring original fea- ical and modernising the vast inte-

65

Fig 103: Compilation of historic photos and newspaper articles, showing what the Old Castle Brewery resembled before restoration started from the 1980s (Old Castle Brewery, 2022: online).

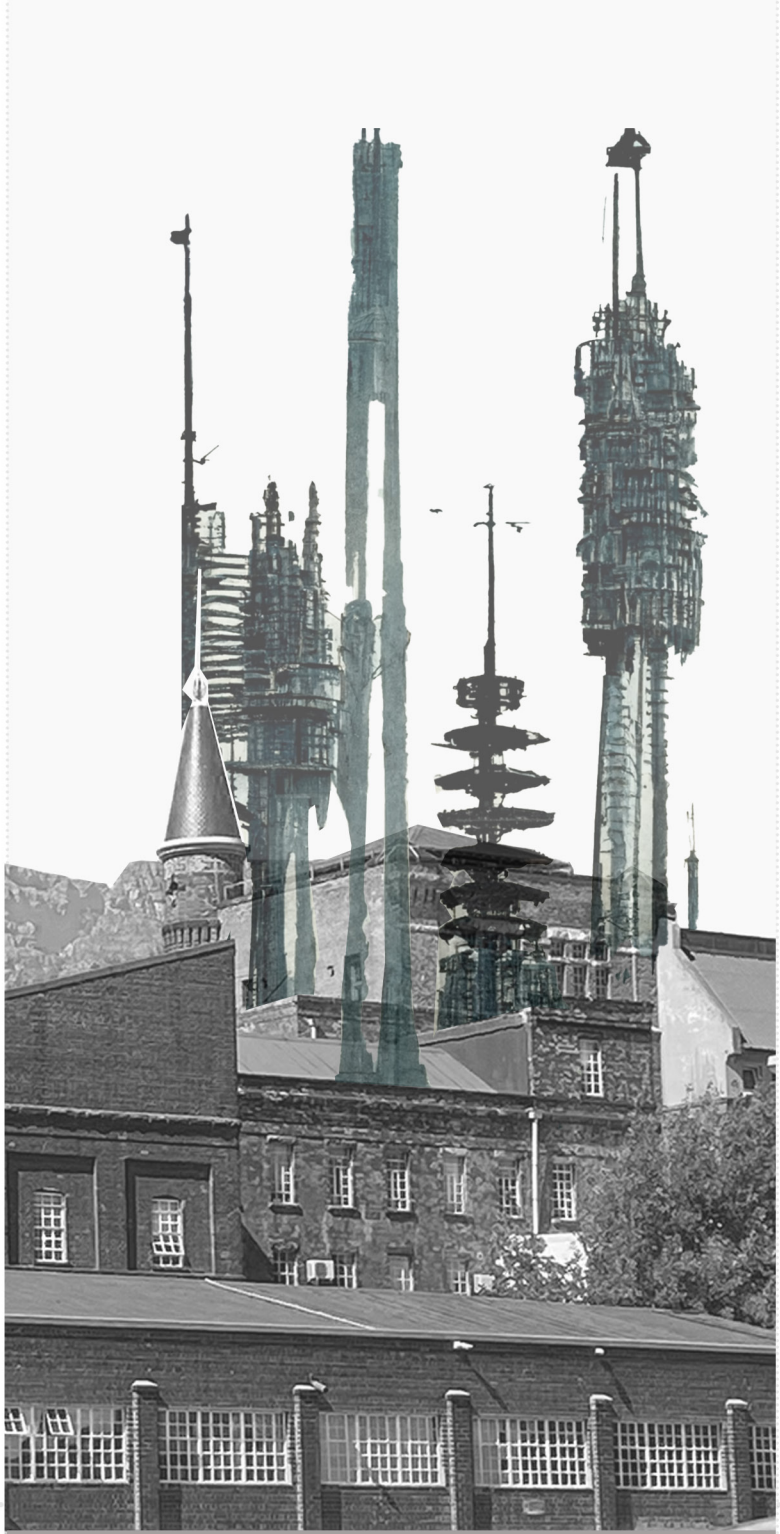


Fig 104: Old Castle Brewery setting with a radical urban renewal attempt using Midjourney, prompt: radical prosthetic attach (Author).

PART 4:

4.5 Radical urban upliftment

4.5.1 Radical urban renewal

Defining radical urban renewal or upliftment requires a greater understanding of radical urbanism, its fundamentals, and its framework. Alfredo Brillembourg and Hubert Klumpner discuss urban renewal in a collaborative article, *The Evolution of Radical Urbanism: What Does the Future Hold for Our Cities? (2015*). They state that, unavoidably, radical urbanism is based on politics and can be described as the notion of challenging prevailing urban logic regarding societal and spatial conditions (Brillembourg & Klumpner, 2015: online). Ideally, radical urbanism refers to the challenging of pre-imposed frameworks, with suggestions of radical interventions such as famous ultimatums pronounced by architects Le Corbusier, “architecture or revolution” or Buckminster Fuller, “utopia or oblivion” (Brillembourg & Klumpner, 2015: online). However, these proclamations were made within a wave of experimental practises in a milieu of interwar conflict escalations, social disjuncture, and ecological anxiety. That instils a belief in individuals that ultimatums through radical change would be the only method of de-escalating circumstances (Brillembourg & Klumpner, 2015: online). Nevertheless, as Brillembourg and Klumpner explain, it is the exact mix of criticality and idealism that lies beneath the surface of radical urbanism, even within a contemporary setting.

They suggest that radical urbanism is concerned with individuals and projects that aim to challenge disciplinary and social bounds, to infiltrate various disciplines to influence vantage points and policies (Brillembourg & Klumpner, 2015: online). They elaborate that radical urbanist projects are not necessarily grand, visionary explications. Instead, they are projects that aim to create a fundamental restructuring in the assumptions of everyday living within a supportive environment without necessarily viewing the design outcome as a solution or clarification (Brillembourg & Klumpner, 2015: online). With this revelation, the authors couple three potential fields or notions of contesting implemented frameworks, challenging the existing in thought, practise, and engagement. The first field is identified as a

provocative vision. That outlines an enticing concept that challenges its milieu. The second field entails the architects' role recasting. That questions the role of an architect within a changing urban environment and the possibilities when their role is shifted (Brillembourg & Klumpner, 2015: online). The third field is regarded as the operation of political change, or as previously mentioned, 'architecture as revolution' (Brillembourg & Klumpner, 2015: online). These three fields, as mentioned above, aid one within radical urbanism. They suggest that urbanism and architecture, when considered in terms of the modernist belief that inner-city working is the addressing of contemporary reality, represent a subversion of implemented social structures, not limited by aesthetics, materials, and form (Brillembourg & Klumpner, 2015: online).

To recognize radical urban upliftment as a striking intervention method, one must consider the definition of typical or 'normal' urban upliftment. Typical urban upliftment is considered with urbanism as a process and product that implements knowledge and design skills to shape the interaction between people and the urban environment (UDISA, 2022: online). Its aim remains the same as radical urban upliftment: developing the urban fabric. However, typical urbanism is concerned with successfully developing existing forms and spaces in settlements and cities (UDISA, 2022: online). Rather than creating provocative visions that directly challenge the existing societal bounds and structures. Typical urban upliftment focuses on the dynamics of the economy, society, and space with an awareness of landscapes and urbanism to integrate the various fields of urban development, such as architecture, city planning, civil engineering, and landscape architecture (UDISA, 2022: online).

Radical urban renewal can lead to radical urban upliftment. While upliftment can generally be defined as improving areas or circumstances, radical urban upliftment refers to drastic changes in the urban environment that offers development, social upliftment, and circumstantial changes. There are various methods associated with urban upliftment, the most prominent being adaptation, restoration, or infiltration. In the case of this study, the potential for radical urban upliftment depends upon radical urban reuse.

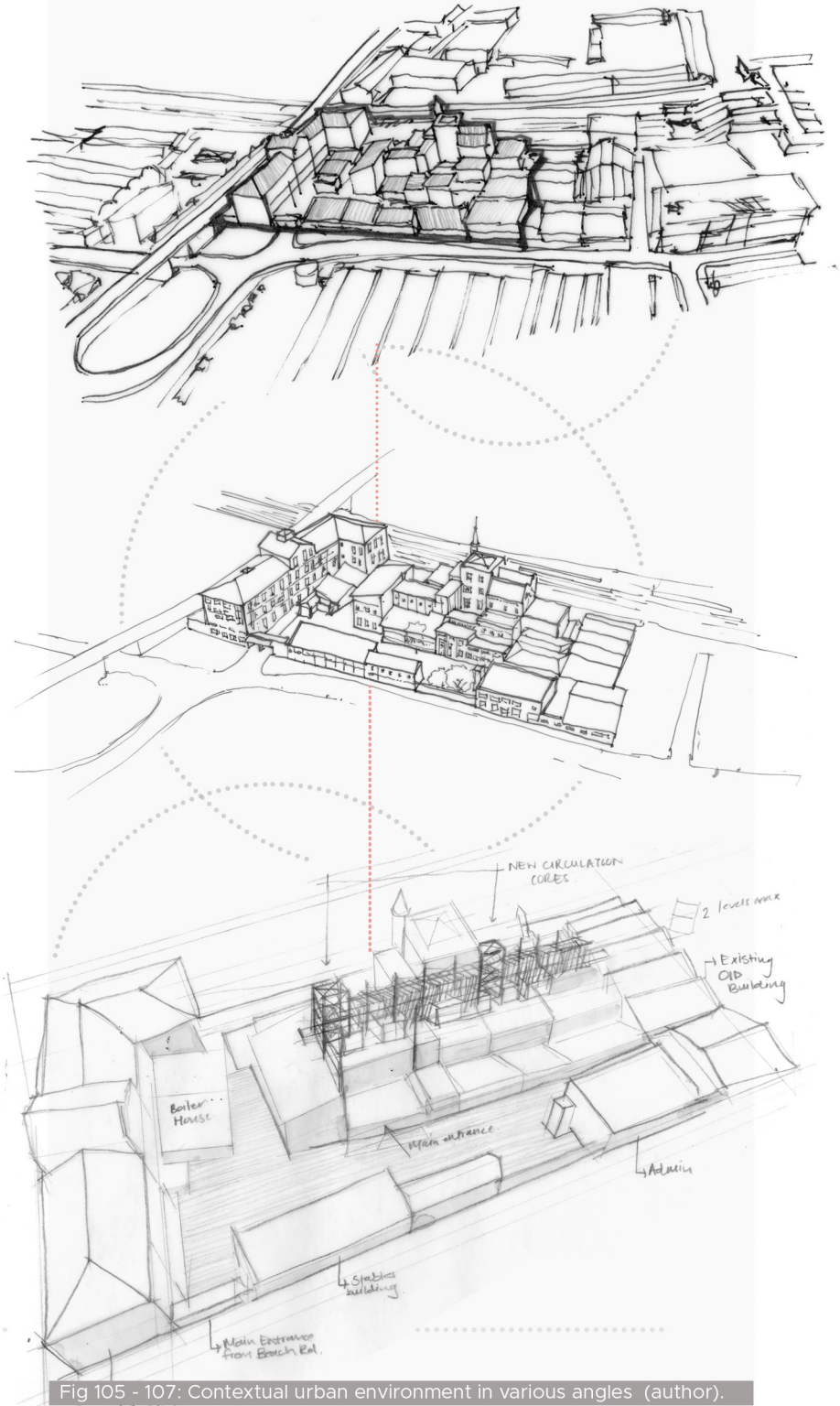


Fig 105 - 107: Contextual urban environment in various angles (author).

4.5.2 Radical adaptive reuse

Radical adaptive reuse refers to a design intervention at an existing site, intending to preserve the historic or existing while creating a new identity independent from heritage through questioning implemented frameworks, processes, and the conventional use of the existing structures. By challenging the existing, with the aim of preservation, one can produce a new spatial and visual composition to enrich heritage, and cultural character, while creating a new identity for interventions (Masters, 2018: online).

However, radical adaptive reuse is not the 'solution' for preserving all historic buildings with the possibility of intervention. Each site and project are specific to its circumstance, opportunities, and spatial possibilities. It is vital to handle each building independently without generalising options for adaptive reuse as a preservation method. The existing should be investigated in terms of its why. Why should radical adaptive reuse be a considered solution, what are the identifiable characteristics to consider in this approach, and how should one go to work to propose a new identity within an existing site?

In a radical adaptive reuse approach, there will be a fusion of time. Connecting past and present styles and influences to create a viable possibility of preservation to last for the future. The notion of architecture never truly being complete, as it is an amalgamation of the past, present, and future, can produce more honest portrayals of cultural development (Masters, 2018: online). As Ian Masters, an architect, explains, contemporary adaptive reuse and preservation methods tend to create a divide between new and old. He states that old or existing buildings are cemented in their current state to showcase their 'ideal' state (Masters, 2018: online). However, this preservation method does not allow architectural progression (Masters, 2018: online). He suggests a more flexible and adaptable approach to adaptive reuse, referring to the terms 'future anterior' as suggested by Aaron Vinegar, describing the work of Viollet-le-Duc (Masters, 2018: online). Future anterior, in this sense, refers to the notion that architectural work is never genuinely grounded within a milieu. Instead, it remains subject to new architectural ventures, interventions, and change, to remain relevant and retain its purpose (Masters, 2018: online). Masters suggests that radical adaptive reuse aims to create other strategies to establish and develop active



Fig 108: Existing exterior courtyard, steel and brick materiality (Author).



Fig 109: Exploration collage of a radical adative reuse approach (author).

and investigative methods of critiquing, modifying, and understanding existing buildings. That ensures the enrichment of historic architectural identity and promotes the creation of a contemporary manifesto that details radical intervention methods with relevant precedents and subsequent progressions to avoid a stagnant methodology for historic preservation (Masters, 2018: online). Radical adaptive reuse may incorporate theories, design approaches and opportunistic ventures to create a radical addition to existing buildings to enrich the historical and simultaneously apply the notion of 'future anterior' to create a new architectural identity.

The Old Castle Brewery building is situated within a relatively limited complex. The existing historic building encompasses most of the complex, with contemporary additions and other historic buildings surrounding the structure. The complex is nestled in a contemporary setting, with structural and material characteristics of the past. However, the building already accommodates contemporary functions, relinquishing the ideal of historic buildings cemented in their supposed 'ideal state'. The further addition of a new identity to the existing promotes the concept of 'future anterior', aiming to evolve the building to change with its milieu and remain relevant in purpose and functioning. With the addition of a venturesome intervention that promotes 'future anterior', one can incorporate Nietzsche's proposition to develop a mutable adaptive reuse strategy that considers the changing urban environment, its aesthetical properties and the ethical implications when redeveloping the urban fabric. By further questioning the 'premise of life', or the functioning of the urban environment, its context and the ethical and aesthetical considerations when reusing an existing historic building.

In order to accommodate the addition of a new identity, the existing building can be identified as a host. A host holds the opportunity to facilitate a joining between old and new, creating a link between two seemingly separate entities to function as one. Similar to a prosthetic fitted to enrich the lives of its wearer, an architectural prosthetic offers the option of enrichment and preservation of the existing while becoming an extension placed, or extension place, within the historic structure. As explicated in the established concepts, architectural prosthetics offer extension through a symbiotic relationship with its host, dependent on the nature of its shared relationship. In order to understand the nature of prosthetics and how they can influence the options of extensions to the existing for the most appropriate approach to a preservation method of radical adaptive reuse and urban renewal, prosthetics will be explicated in their medical, architectural, and sculptural form.

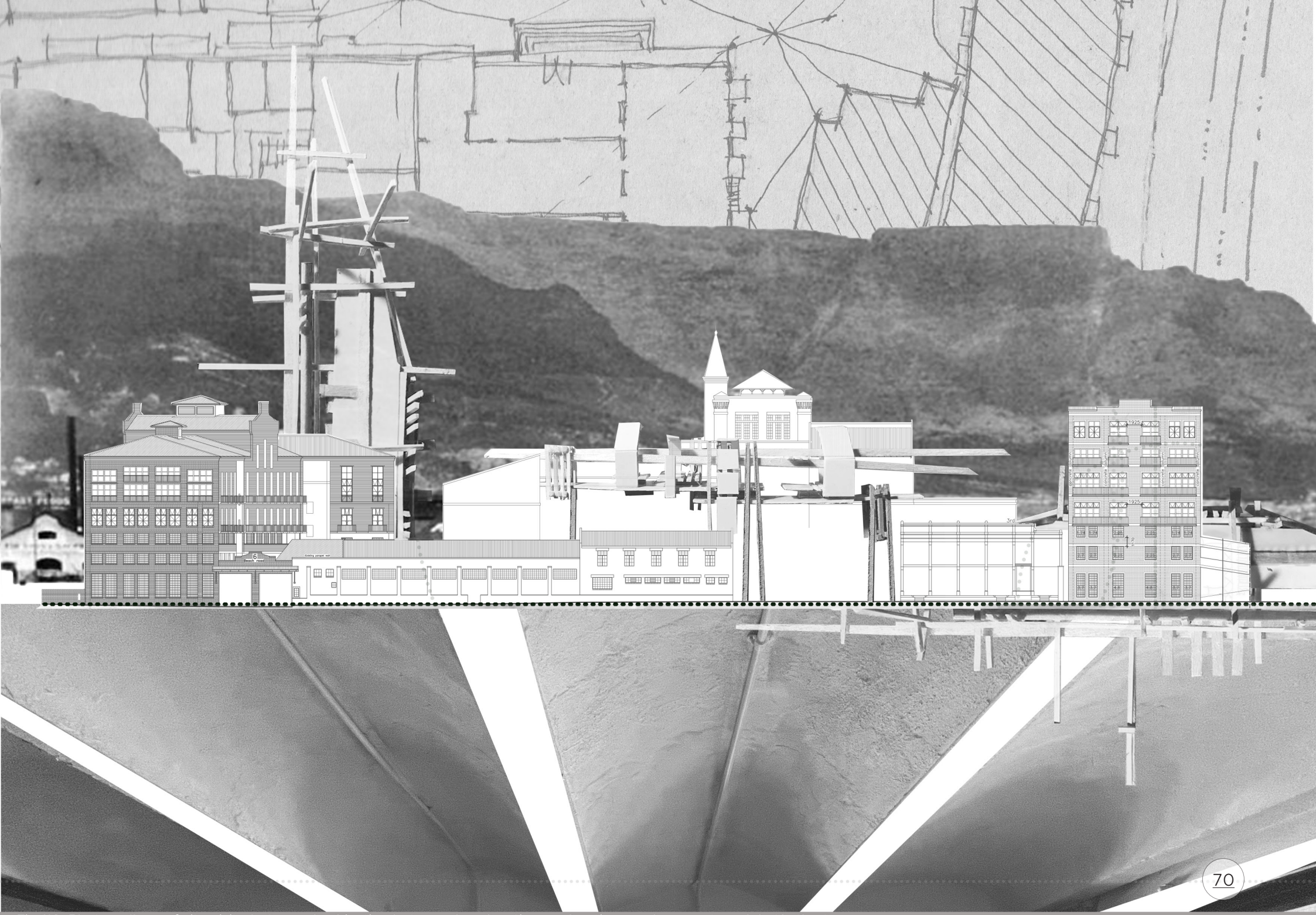


Fig 110: Photo collage of site visit photographs, hisotic photographs, elevation explorations and concept models (Author).

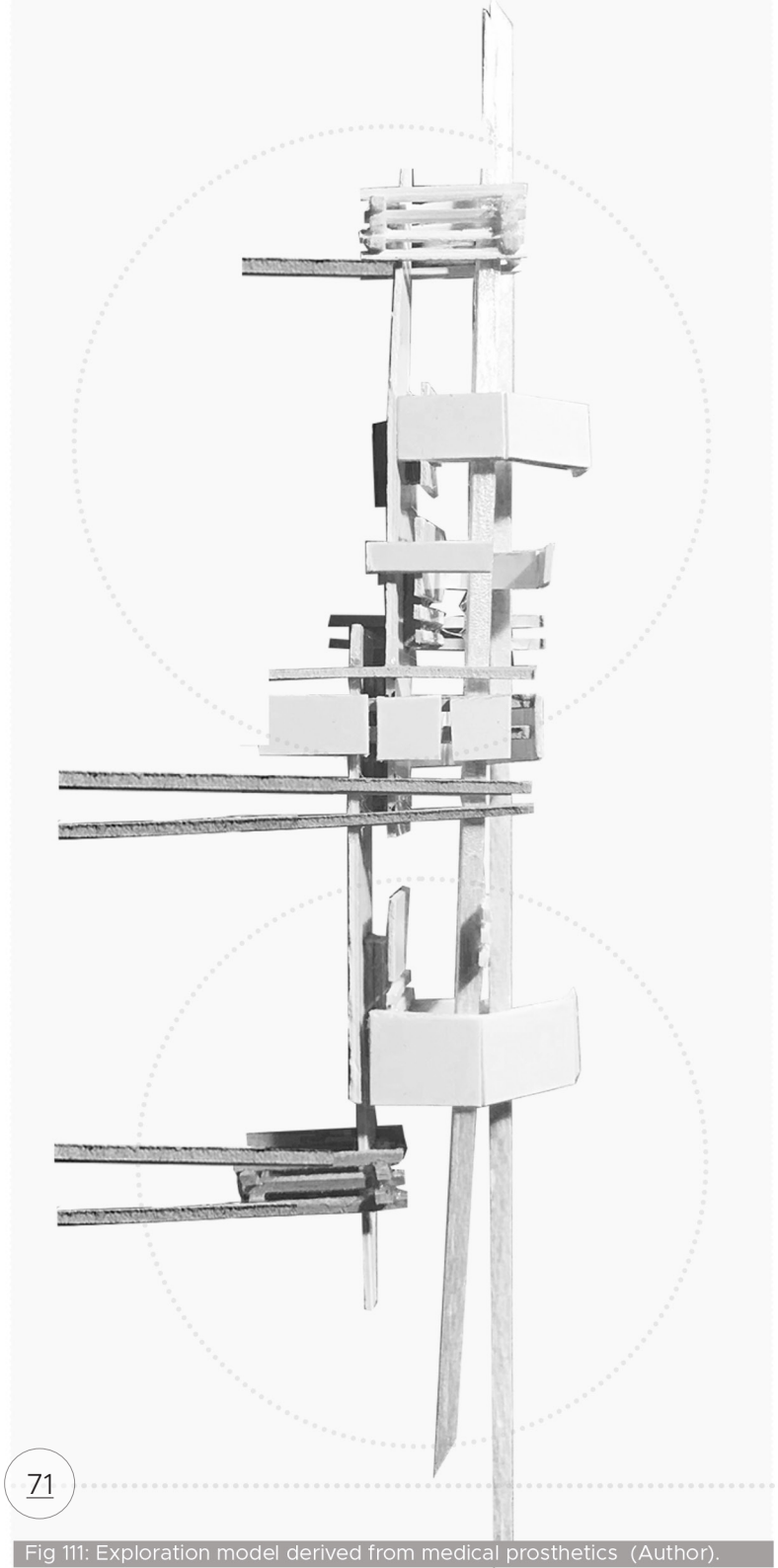


Fig 111: Exploration model derived from medical prosthetics (Author).

PART 5:

4.6 Prosthetics

4.6.1 Medical prosthetics

Prosthetics, in medicine, refers to the medical and technical process of creating and fitting a prosthesis or artificial limb (Advantagepo, 2022: online). Depending on a person's needs, various prostheses can be made. The type of prosthesis depends on the person's prevailing features, including certain joints and the position of amputation or loss. No matter the type of prosthesis, prosthetics can offer a person a certain level of comfort and aid with regaining a natural range of motion (Advantagepo, 2022: online). The prosthesis mimics the functioning of the limb it is replacing, explicitly fitted to the precise needs of the wearer. In order to create a functional prosthetic, certain circumstances need to be considered. These include the existing soft tissues' cushioning ability to the bone, the amount of pain the person endures, the level of activity before amputation, the current range of motion and the ideal goal for mobility after the prosthesis (Dr Keszler, 2022: online).

These aspects are the deciding factors as to whether a person is eligible for prosthetics. If they qualify, a prosthetist will assess the patient and provide the necessary information to select the right components for a prosthesis that would suit their needs. Once a prosthesis has been decided, the patient enters the rehabilitation phase with the required materials and mechanisms—a collaborative process between the patient, the prosthesis, and various medical professionals. The body is trained to accommodate, accept, and embrace the 'new' limb, to improve the overall quality of life through a new method of living.

Similarities between the use and practices of prosthetics can be identified and applied to a design method in architecture. However, the medical prosthetic offers a conservative approach. Medical prosthetics are meant to replace the natural function of lost limbs and are created to seem as natural as possible. However, prosthetics do not have to be limited to realistic imitation. Beyond mimicry, prosthetics can explore sculptural creations with enhancement qualities. Prosthetics can be adjusted to serve as a manifesto for the future, fantasy, and sculpture, challenging the boundaries of medical prosthetics, patient needs, and their imagination limits.

4.6.2 Prosthetic architecture

As medical prosthetics offer the body an opportunity for rehabilitation, it also offers an extension. Mark Wigley, a New Zealand-born author and architect, suggests in *Prosthetic theory: The disciplining of architecture (1991)* that a prosthesis reconstructs and transforms the body. Convoluting and extending its limitations and borders (Wigley, 1991: 9). Through these kinds of augmentations, the body gains an extension or supporting limb that enhances its capacities and capabilities. In this case, he elaborates that the body can be substituted with a building. A prosthesis to a building is always already architectural, a supplementary structure grafted onto a 'residual' building (Wigley, 1991: 9).

An architectural prosthesis is attached to an existing component as an unfamiliar element reconstructing, extending the component it is joined to. The prosthesis cannot stand on its own and cannot simply be removed if it establishes its extending function to the existing (Wigley, 1991: 9). The prosthetic becomes an extension placed, or an extension of place, establishing place when it joins the existing. The joint between the existing and the prosthetic components becomes an interaction and collaboration, with the intent of a beneficial relationship and improving quality of life.

Other qualities and advantages can also be identified in architectural prosthetics, which are derived from medical prosthetics. It is essential to consider the necessary considerations and influencing factors to comprehend the existing component. By analysing and assessing the residual structure, its needs, strengths, and weaknesses, one can determine the ideal prosthesis components to create a prosthesis that would be beneficial and advantageous to attach to the existing. Influencing factors, as derived from the medical prosthetic application in terms of architecture, include the activity within the existing building, its location within a larger context, the function within its current context, connection possibilities for new applications, structural systems, materiality, aesthetics, and the intended goals to be achieved if an architectural prosthetic would be added.

Once these elements or factors have been considered and applied, a 'type' of prostheses can be investigated. This type aims to be the most beneficial to the residual building and intends to be constructive in terms of materiality, structure, function, and aesthetics. The success of the determined prosthetic type depends on the relationship between the existing and the prosthetic.

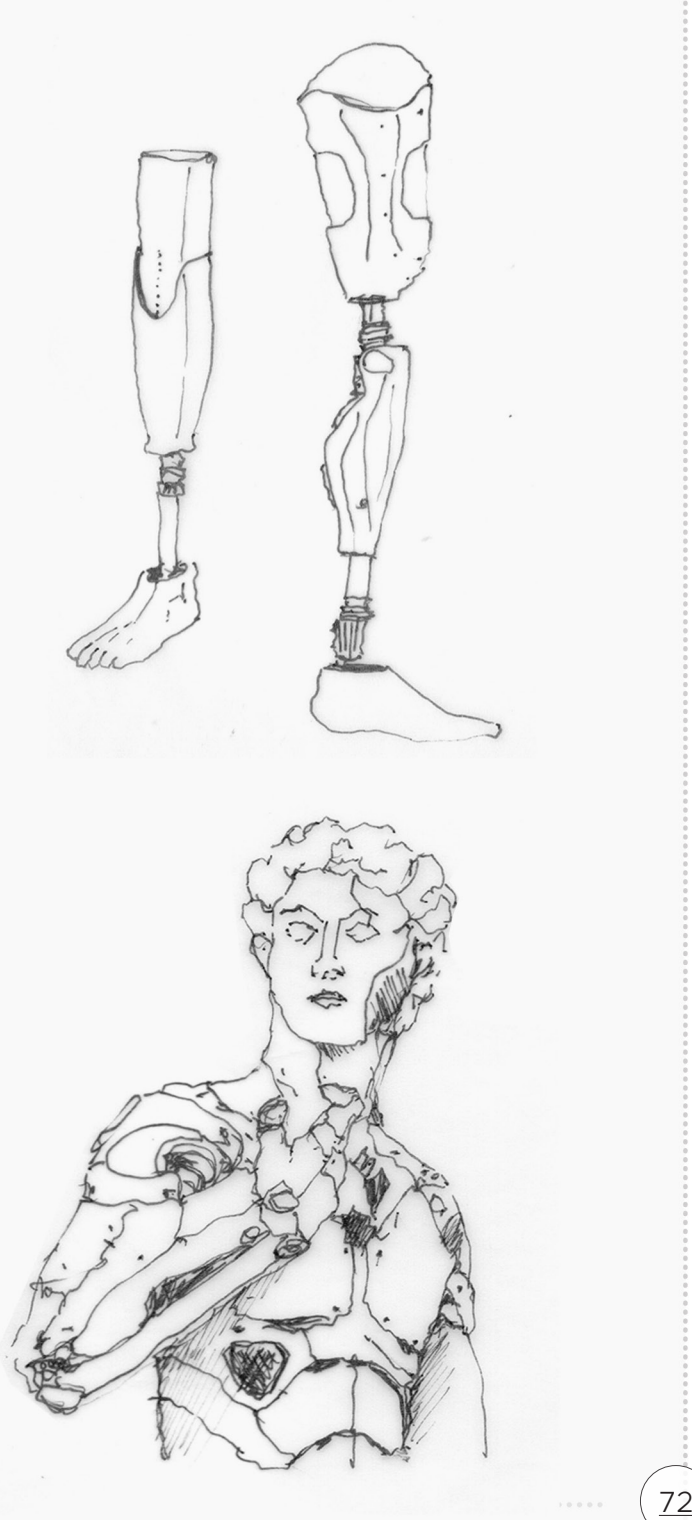


Fig 112-113: Medical prosthetics & venturesome prosthetics (author).

In the conceptual explorations, an overview of 3 types of prosthetics and their relationship to the existing were introduced. These explorations provide the essentials that can further be investigated and understood to consider the site specifications, the state of the existing structure and the joint possibilities in conjunction with the prosthetic potentials.

Prosthetic architecture does not have to mimic the role of medical prosthetics. As previously mentioned in parts 3 and 4, radical interventions regarding adaptive reuse and urban renewal allow prosthetic architecture to explore all possibilities of form and function. That allows for the extension of place, function, and capabilities while preserving historical and cultural heritage. Architectural prosthetics can be venturesome in shape and structure, as these additions are site-specific extensions of existing structures. However, architectural prosthetics can learn from medical prosthetics and the human form while enjoying the freedom of reconfiguring conventional frameworks and challenging limitations. An example of an extreme within prosthetic architecture is cyber-prosthetics. Matteo Cainer, an architect, suggests in *Cyber-prosthetic architecture (2014)* that buildings can be seen as potential hybrid platforms that are capable of re-integration into urban environments (Cainer, 2014: 2). He suggests that existing buildings are cybernetic organisms, built as components within a large urban environment interconnected through networks and urban layers (Cainer, 2014: 2). Although Cainer suggests a logical approach to the link between buildings and their environment, he challenges their role and interface. He further suggests a neuro-architectural extension or prosthetic to be integrated within a building (Cainer, 2014: 5). To retain past attributes, buildings are further equipped with a kind of artificial intelligence that ensures natural evolution and the enhancement of an extension placed within the existing. Cainer suggests 'layers of change' that ensure continuity within a technological advancement, that strive for the definition of new roles within the urban fabric (Cainer, 2014: 6). Although his proposals are set in a very far future, he does challenge the exploration possibilities for venturesome prosthetics, where venturesome prosthetics can be a viable possibility for radical adaptive reuse.

4.6.3 Venturesome prosthetics

Exploring more works of Matteo Cainer and his practice Matteo Cainer Architecture based in London, one can discover other possibilities within prosthetics, with a direct link to venturesome urban augmentation, prosthetic architecture, and resilient adaptive reuse. Matteo Cainer architecture is an interdisciplinary practice specialising in a conceptual approach to design (Matteo Cainer Architecture, 2022a: online). Proposing research and conceptual visions in urban design, spatial planning, and temporary installations. In their research titled *'Resilient adaptive reuse'*, Cainer suggest an investigation into the human model. Describing the human model as the historic measuring device of the public environment (Matteo Cainer Architecture, 2022b: online). This model has, over time, undergone a radical shift as technology progresses, allowing virtual worlds and reality to unite to create a different environment unobstructed by traditional constraints and limitations (Matteo Cainer Architecture, 2022b: online).

Cainer suggests that within this environment, various communication technologies attempt to duplicate the exterior form of the human model, with electronic technologies to imitate the interior of the human body (Matteo Cainer Architecture, 2022b: online).

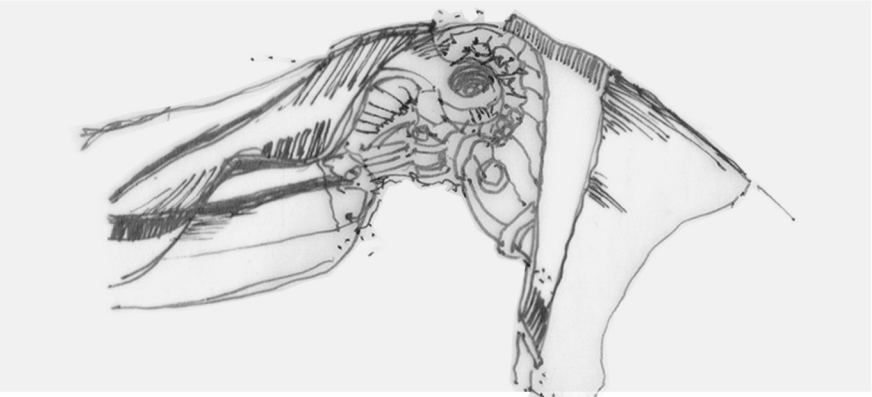


Fig 114: Radical prosthetics (Author).



Fig 115: Prompt: Venturesome architectural prosthetic-Midjourney AI (Author)

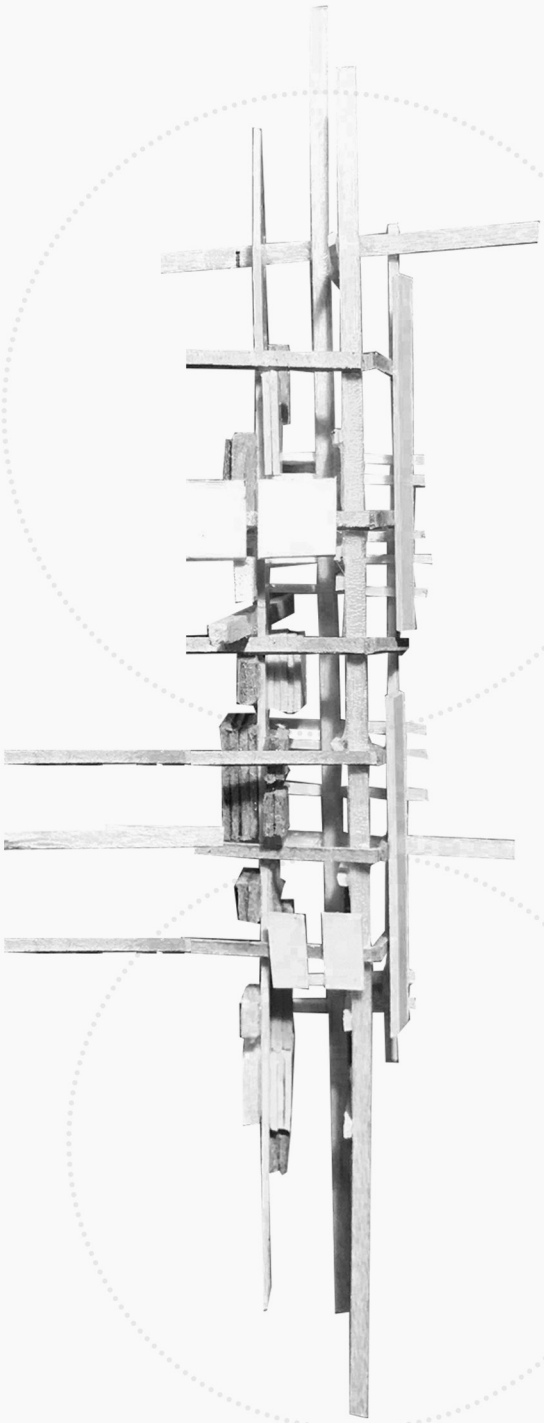
He further elaborates that this principle of duplication introduces the machine-like human embodiment described by Felix Guattari, a French psychoanalyst, and Gilles Deleuze, a French philosopher. The Frenchmen described the liberation from human embodiment as the 'becoming machine' notion. Theorising that the human embodiment becomes free of bodily constraints, replacing organs with cybernetic parts or prosthetic bodies (Matteo Cainer Architecture, 2022b: online). Offering advancements and almost complete integration between body and machine.

Cainer challenges traditional prosthetics, investigating the possibilities of prosthetic bodies and stating that the human model possesses the ability to respond to change and adapt. However, the human body is restricted by the addition of imitating prosthetics that only aim to create a functional replacement for a lost limb rather than to offer advancements and more venturesome possibilities. Prosthetics do not necessarily need only to provide a lost or anticipated function. The process of joining body and machine, similarly to cybernetics, is about more than the unadorned joining. The joining process and connection are about the experience of the prosthetic and the host or occupant (Matteo Cainer Architecture, 2022b: online). Cainer suggests that the materiality and the forming prosthetic become secondary to the reframing and creating a new experience, identity, and perception (Matteo Cainer Architecture, 2022b: online).

In Cainer's practice, he acknowledges the ethical considerations of creating new identities through architectural design and urbanism, highlighting the importance of questioning and the cultural, social, and political integration with technology to challenge the limitations of traditional conventions (Matteo Cainer Architecture, 2022b: online). He imagines the attitude towards historic architecture as an expression of respect for the complexities of its heritage, yet not accepting it as a completed task or endeavour. Instead, viewing the existing building as a canvas for further creation through cultural innovation and reconfiguration (Matteo Cainer Architecture, 2022b: online).

4.6.4 Prosthetics as methodology for ethical indulgence

It has been argued in previous sections that ethical indulgence can be coupled with prosthetic architecture. Ethical indulgence is concerned with preserving existing attributes while allowing indulgence and freedom to explore new identities and possibilities. Prosthetic architecture is concerned with adding a



supplementary structure to an existing host or occupant. In radical adaptive reuse or urban renewal, prosthetic architecture aims to preserve the existing host while creating a new experience through the connection of old and new. It is further aiming to acknowledge ethical concerns when joined with ethical indulgence—offering engagement towards the surrounding urban environment to consider the community and initiating conversation between the new addition and the existing buildings.

Ethical indulgence encourages architectural prosthetics to reflect on the physical, societal, and ethical limitations when adaptively reusing a historic building—providing an outline of a framework for intervention without implementing strategies of addition that could cause detrimental effects on the existing building's historical, social, and cultural values. This allows prosthetics to challenge conventional intervention strategies and the existing architectural fabric while informing the designer of socially accepted actions that ensures gratification at little or limited cost to the surroundings or the existing building. Most importantly, preserving the historical identity while creating a connecting contemporary identity that aims to initiate or facilitate architectural progression.

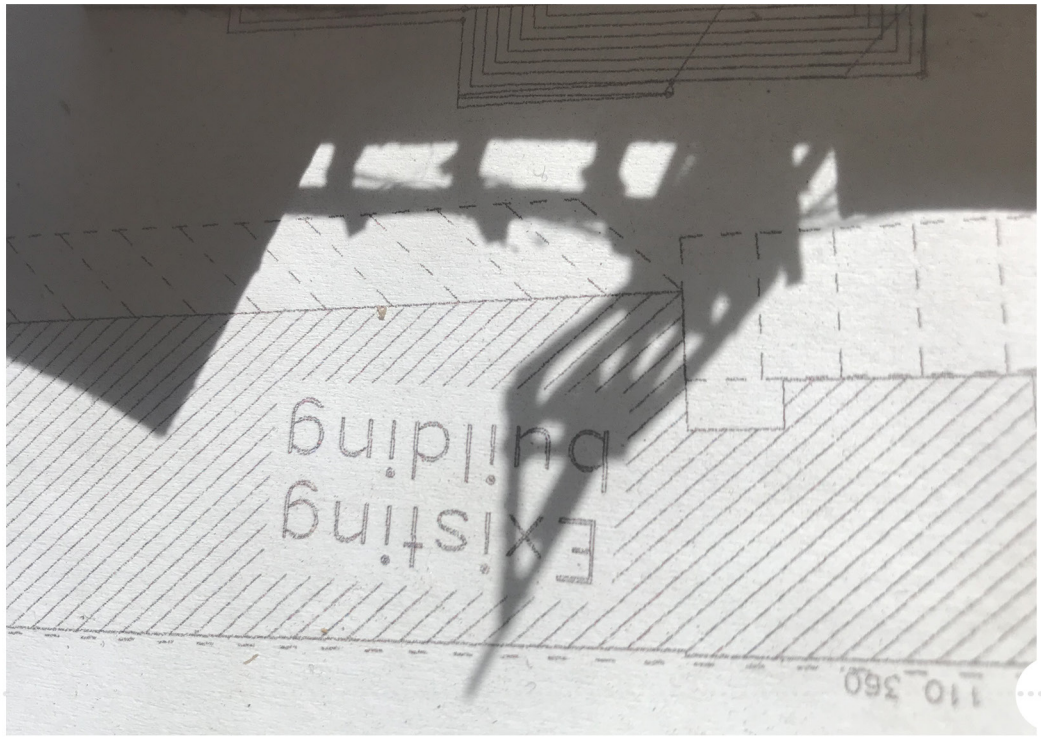


Fig 116-117:Exploration model, Right: suggestion of prosthetic extension (author)

4.7 Conclusion

In this chapter, it was established that indulgence plays an essential role in the introduction of an inner-city chocolateria within a historic building in Cape Town. Indulgence can be found in chocolate and architecture, brought together by the phantastic Willy Wonka in *Charlie and the Chocolate Factory*. Wonka can be seen as an inspiration for amalgamating chocolate and architecture into a single concept that proselytises venturesome architecture in terms of [chocolate] indulgence. As indulgence is often associated with intemperate pleasure, the promise of pleasure is gainsaid by the looming fear of retribution, typically attributed to 'pleasure island' typologies. However, by incorporating ethics as an Epicurean approach outlined in section 4.2, indulgence becomes governed by a system that draws on the allure and propensity of pleasure yet removes the retribution typically attributed to hedonism. Therefore, one can re-establish the promise of a 'pleasure island' to be concomitant with positive outcomes, devoted to the ethical indulgence of pleasures without the fear of punishment.

The incorporation of an Epicurean reinvention established an ethically indulgent approach that can be applied to architecture and the indulgence of chocolate. However, to formulate this approach, one had to investigate the various layers of ethics regarding architecture, the urban environment and chocolate production. These layers provide the base of standards and principles that must be considered when designing an inner-city chocolate factory. Once established, ethical indulgence can be applied to adaptive reuse strategies to achieve radical urban upliftment while preserving the existing identity of the historic building.

Furthermore, radical urban upliftment was considered in terms of radical urbanism and adaptive reuse to ascertain three identified fields that aim to challenge the thought, practice, and engagement of already implemented frameworks in the urban environment. The investigation of various schemes of radical adaptive reuse was implemented to find the most appropriate method of design intervention. Therefore, the concept of 'future anterior' was established to be the most appropriate response where future anterior is incorporated with the explicated musings of Friedrich Nietzsche in section 4.5.2, to develop a mutable adaptive reuse strategy that considers the shifting urban environment, its ethical implications, and aesthetical properties to evolve the identity of the historic building to change with its milieu.

To aid in creating a new identity capable of radical urban upliftment, venturesome prosthetics were investigated. Establishing the role of augmented prosthetics to go beyond mimicry, as found in medical prosthetics, and to challenge conventional intervention strategies while becoming an extension placed. Venturesome prosthetics become the method of radical urban renewal to solidify a new identity for the historic building while preserving its existing character.

While chapter 4 set out the theoretical backing of the design stratagem, chapter 5 identifies precedents that would further aid the developing design strategy and intervention. This chapter will focus on specific precedents, to showcase their functional, structural and, for one, adaptively reused characteristics.

05

Studies

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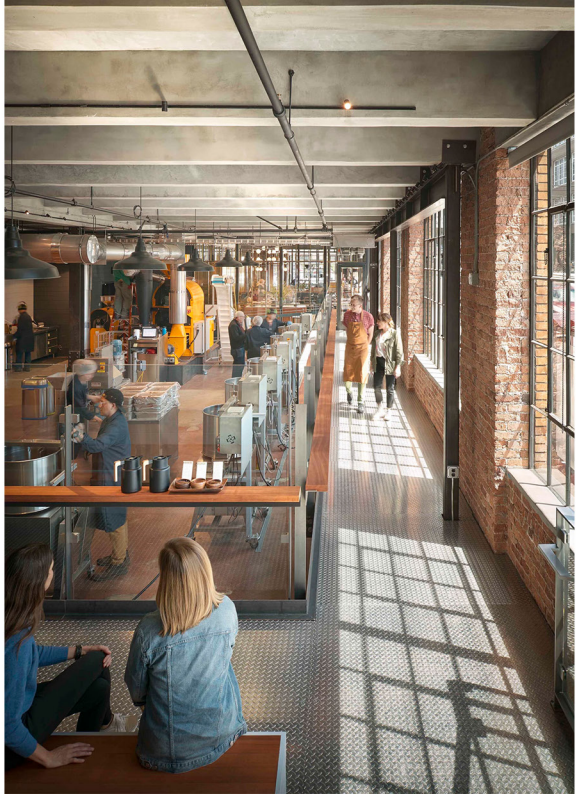






Fig 118-121:left: Interior of Dengo chocolate store (Levy, 2021: online) Top right: Dandelion Chocolate (Dandelion Chocolate, 2022: online) & (Chang, 2016: online). Bottom right: Mad Giant beer brewing (Archdaily, 2016: online)

5 | Precedent Analysis

Introduction

To identify precedents relevant to the intent of the research, one must consider the theoretical stance, proposed function, possible structural possibilities, and spatial exploration. In the previous section, the theoretical approach was developed and explicated, with the most important titles therein being future anterior, ethical production and adaptation, healthy indulgence, augmentative prosthetics and a mutable Epicurean adaptive reuse strategy or approach. These identified elements aid to narrow down the search for applicable and appropriate precedents, that could provide insight into already built examples.

The identified precedents are more related to the functional program and the types of spatial development occurring in a building with a similar function to the proposed program. However, the precedents were also identified for their use of structure, the combination of private- and public space and the connection formed by immersing a visitor in the manufacturing process.

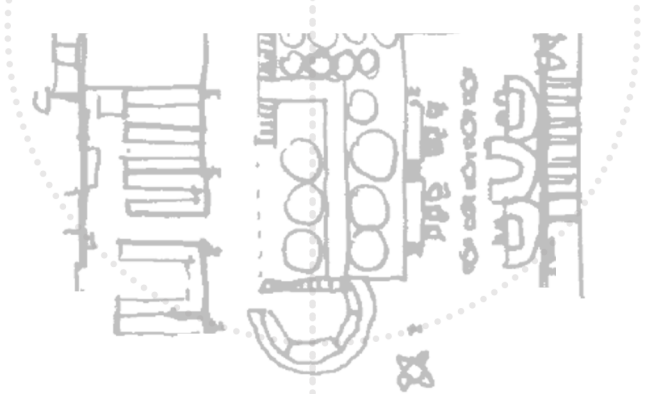
The precedents are:

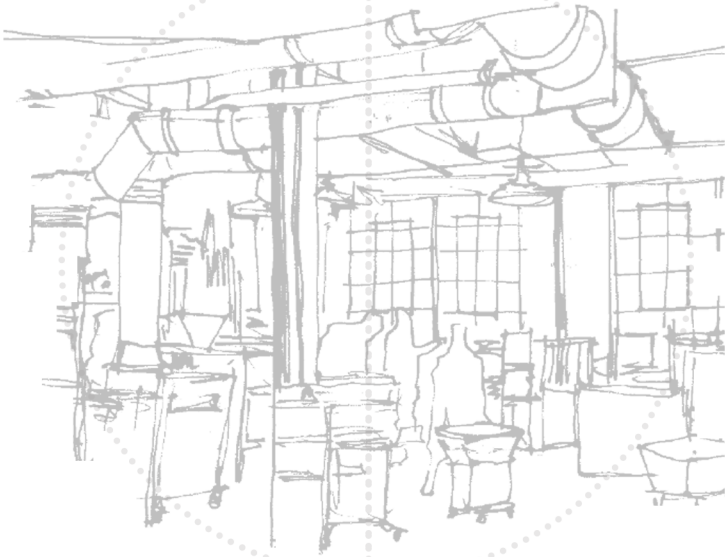
- Dandelion Chocolate Factory, San Francisco

- Mad Giant Beer Brewery, Johannesburg

- Dengo Chocolate Store, São Paulo

All three precedents are analyzed in terms of their applicability, the lessons that can be learned from each, as well as possible principles identified that can be applied during the design process.





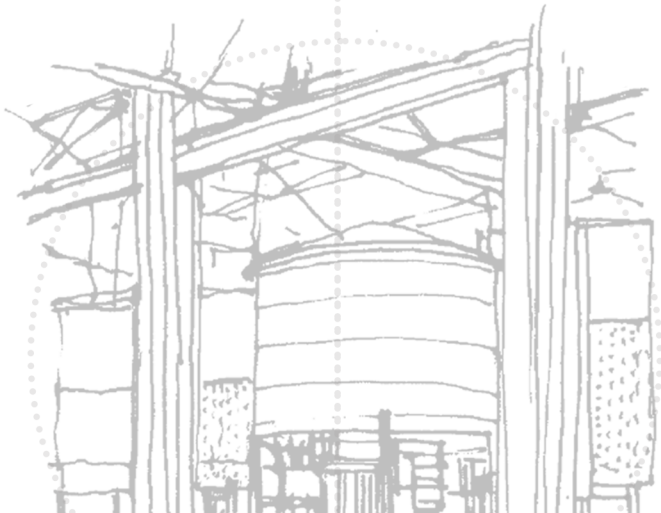


Fig 122-124: Sketches made for analysis of precedents (Herbert, 2022: online).

5.1.1 | Dandelion Chocolate Factory, 2019

Location: San Francisco, California, USA
Architect: Gensler Architects
Project scope: Adaptive reuse (1923)
Floor area: 2610 m2

The Dandelion Chocolate Factory, located in San Francisco, is an artisanal chocolateria, developed to aid and entertain the community, as well as to invite tourists into the neighbourhood. The adaptive reuse project endeavoured to reimagine a vacant industrial-styled warehouse, of about 107 years old. The building was approached with sensitivity towards its facade, only maintaining the existing and repairing what time has damaged. The interior, however, was retrofitted to reflect the Dandelion Chocolate brand, 'bean-to-bar' ethos of sustainability and artisanal production.

The aim of the public enthused chocolate factory was to expose members of the public to the chocolate-making process and the inner workings of an artisanal kitchen. Visitors enter the warehouse and are greeted by a marble entry stone inlaid with cocoa pods. From the entrance, visitors can glimpse into the kitchen space, which houses all the necessary equipment for chocolate making.

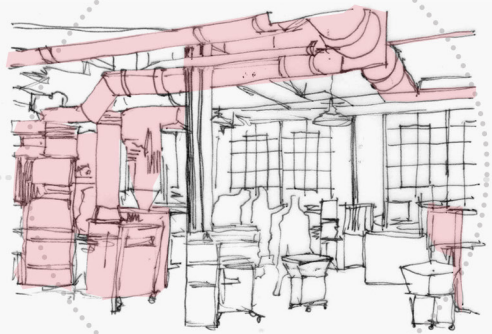
Visitors can venture further into the building to become fully immersed in the chocolate-making process. Spectating staff and machinery as they produce chocolate, that can be tasted, bought, and enjoyed only a few steps away from its point of origin. Furthermore, a classroom is included in the functional program, to serve its educational purpose, where visitors can be taught about the chocolate-making process.



Fig 125-126:

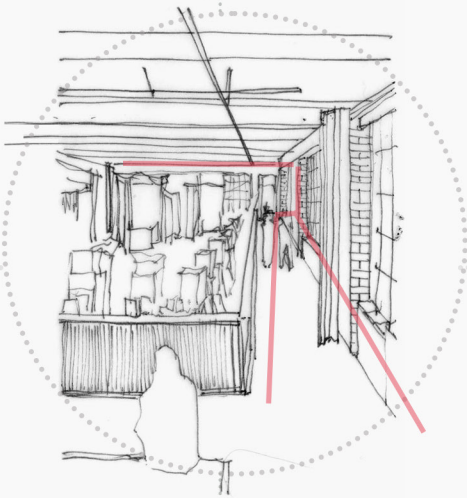


Top: interior view of immersive factory.Bottom: Exterior of historic building (Foodproc. tech, 2022: online).



Industrial atmosphere

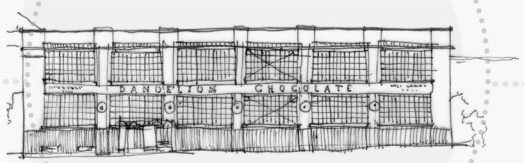
Machinery as centerpiece



machinery on display

immersive experience

Hidden sight lines



Historic building

Preserved facade

Principles identified:

Sensitive adaptive re-use

Historic building remains intact

The facade is eintirely preserved

Combining public and private functions

Exposing visitors to the production process

The choice of materials reflect the spirit of manufacturing

A variety of functions are incorporated into one space

Hiding sightlines to draw visitors into a space

Workspaces can be flexed and utilised as gathering space

Lessons learned:

The factory, workshop and workspace are integrated into the public space. Creating a hybrid space, where members of the public can spectate the chocolate-making process. Machinery and equipment needed for chocolate making are on display, forming a part of the interior design. It creates an industrial atmosphere within an existing building. The program includes a variety of functions ranging from educational, interactive, and spectating. Functions include a cafe, a retail store, a tasting lounge/ station, a lecture room or classroom, and an artisanal kitchen for chocolate production.

The core ideal incorporated into the layout of functions was to merge public and private functions to an extent. Chocolate testing and experimenting remain the most private, while members of the public can enjoy access to the rest of the manufacturing process.

The project is an adaptive reuse endeavour. Reimagining a 107-year-old industrial warehouse to accommodate a chocolate factory, cafe, and store. The reimagining includes the incorporation of functions to aid and rejuvenate the community as well as to house an artisanal chocolate factory that showcases the local chocolate-making skillset. The interior of the building showcases a variety of materials such as a variety of wood elements, that include redwood millwork and, brush-painted siding. These materials were chosen to reflect the spirit of manufacturing.

Fig 127-129: analysis sketches (Author).



Dandelion Chocolate Factory, San Francisco.

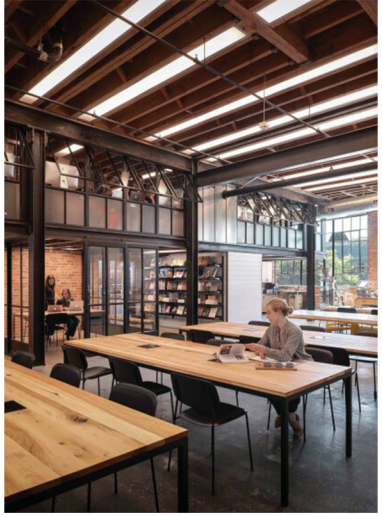












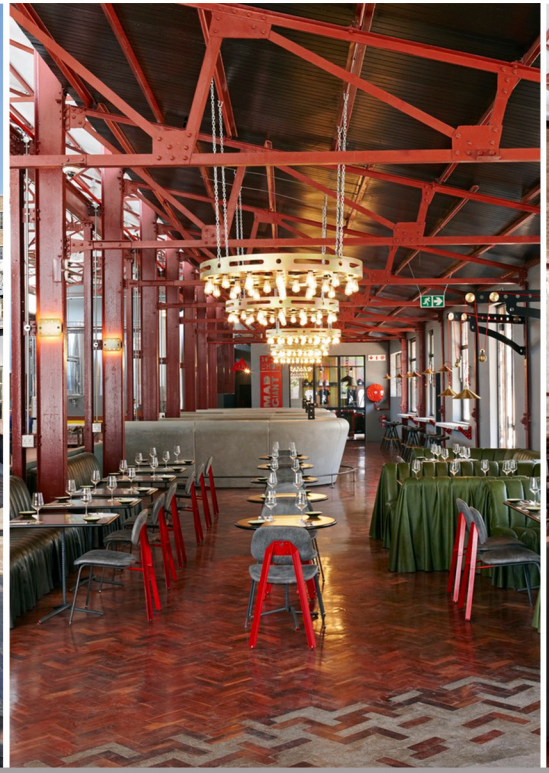
Fig 130-136: show the preserved exterior, cafe, retail, library and research hub + some of the chocolate making machinery. Left: (Henderson, 2022: online). Right top(Chang, 2016: online), middle(Henderson, 2022: online).

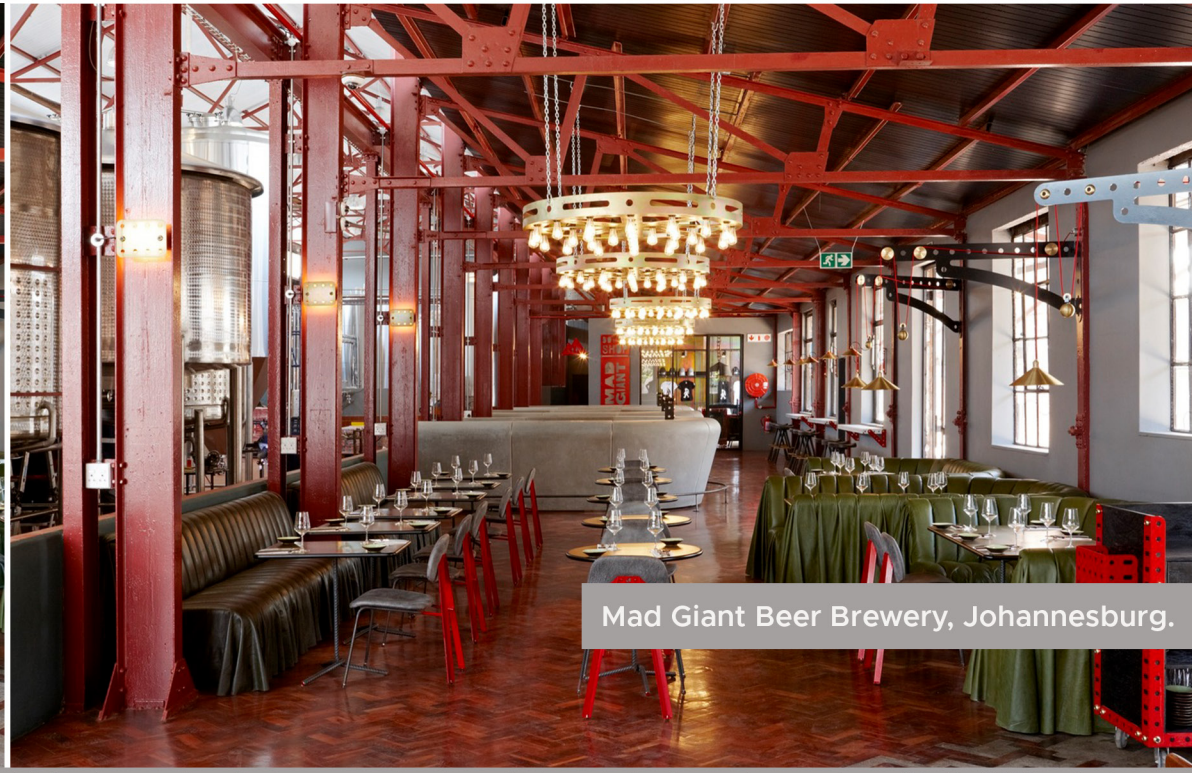












Mad Giant Beer Brewery, Johannesburg.

Fig 137-142: exterior and interior views, showing the reused steel structure, emphasized with red paint. The images show the brewery and restaurant intergrated as immersive experience (Martin, 2022: online).

5.1.2 | Mad Giant Brewery, 2016

Location: Johannesburg, Gauteng, RSA
Architect: Haldane Martin
Project scope: Adaptive reuse (1936)
Floor area: 1100 m2

Originally, the building now known as Mad Giant Beer Brewery was an elevator factory in the heyday of Johannesburg and its industrial era. The 80-year-old shed stood vacant until the Mad Giant showed interest to refurbish and re-use the industrial-styled shed. The main focus of the reuse project was to aid in urban regeneration towards the Johannesburg inner-city central.

The interior aims to project the industrial atmosphere initiated by the exposed skeleton steel structure, which has been painted a red undercoat. Accentuating the trusses and columns throughout the floorplan layout, in-between functions. The steel structure is coupled with a variety of materials, to provide an interior that would accommodate interaction and multi-functional use. These materials include recycled Rhodesian teak parquet laid in a herringbone fashion for flooring, concrete work surfaces and bars, and wooden flooring that is merged with black and white tiles, in a honeycomb pattern, within the bottle store.

Other interior features, that add to the industrial style, are leather and steel additions. Various furniture elements are made from steel components, adorned in leather, and accentuated with wood. the choice of materials binds the interior into one interactive space, encouraging new connections, as the new structure is connected to the existing.

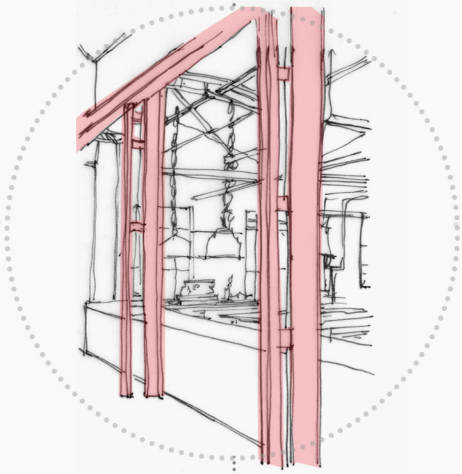


Fig 143-145:



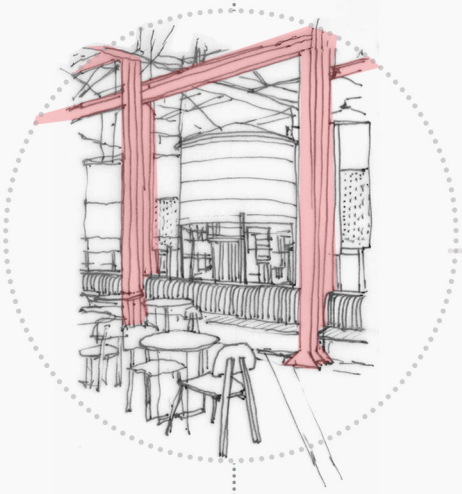


Top: interior & exterior view (Archdaily, 2022: online).Bottom: interior integrated space (Martin, 2022: online).



choice of materials

Exposed steel structure



immersive experience

variety in materials

machinery as centerpiece



Use of steel interior & exterior

Accentuated construction

Principles identified:

Adaptive re-use (interior renovation)

Urban regeneration Flexible interaction space

Exposing visitors to the production process

Integrated functions

Exposed steel structure

Combining public and private functions Industrial atmosphere & structure

The specific choice of materials to create am industrial atmosphere

Utilising the DIY ethos of the renegade South African craft beer

Lessons learned:

The existing building, an 80-year-old industrial shed, was renovated to accommodate the Mad Giant Beer Brewery. It showcases an exposed skeleton steel structure, within a shell of a warehouse. The exposed steel structure is extended towards the building exterior, hinting at the structure on the interior. The exposed steel structure is accentuated with red paint, to draw attention to the existing while creating a reimagined industrial interior atmosphere.

The floor plan layout is open, flexible, and multi-functional. A variety in seating, activities and functions encourages interaction between visitors. The beer brewing process is integrated into the floorplan layout, exposing visitors to the brewing process at any stage of production. Visitors can be spectators to the staff as beer is produced and served to the public. The equipment required in the process of beer brewing adds to the industrial atmosphere within the building.

Furthermore, the roof was removed to uncover and accentuate the steel trusses and structure. The renovation of the historic building was due to the upsurge in movement towards the Johannesburg inner-city. The brewery intends to offer an immersive visitor's experience, for passers-by, locals, and tourists. Local artists and craft beer enthusiasts decorated the interior with graffiti and artworks, to ensure a South African touch.

Fig 146-148: analysis sketches (Author).

5.1.1 | Dengo Chocolate store, 2020

Location: Pinheiros, Brazil, South America
Architect: Matheus Farah & Manoel Maia Arquitetura
Project scope: Retail / showroom
Floor area: 1500 m2

The building is designed to illustrate a part of every production stage in the chocolate-making process. The large glazing panels offer passers-by a glimpse into the chocolate-making process's inner workings, inviting guests in to explore the interior (Levy, 2021: online). The store features a transparent case, transporting cacao nibs from the milling machine to further production machinery. This tube is suspended from the ceiling, stretching across various areas of the shops' interior. The store also offers interactive and immersive experiences, such as creating personalised chocolate bars and chocolate tastings in the café or ice cream bar.

The materiality is one of its best features, consisting mainly of timber, glass, and red ceramic floor shards. The materiality and structure were unprecedented for Brazil. The structure consists of four floors constructed from timber (González, 2021: online). Utilising cross laminated slabs, glulam beams and timber columns (González, 2021: online). Hollow wooden cubes give the building a sense of permeability and movement through its volumetric composition (González, 2021: online). Transparencies between the wood accentuations contribute to a connection between the various floors (González, 2021: online). Other materials include the red ceramic "caquinhos", or broken shards, that pay homage to the city and its traditions (González, 2021: online). The "caquinhos" is reminiscent of the typical materials used for São Paulo residences from 1940-1950 (González, 2021: online).

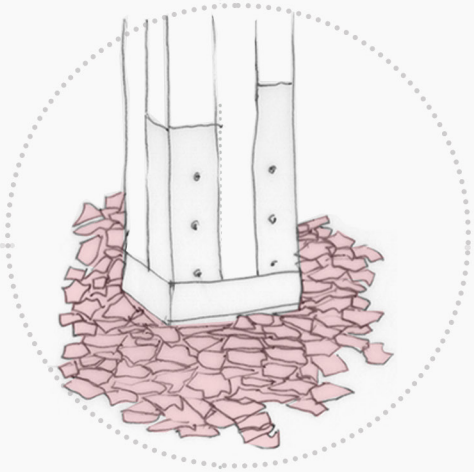


Fig 149 -151



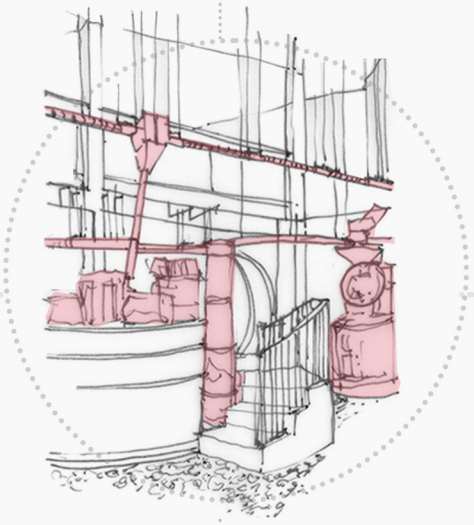


Top: Exterior view of Dengo Chocolate store.Bottom: Interior views and details (Parente, 2022: online).



choice of materials

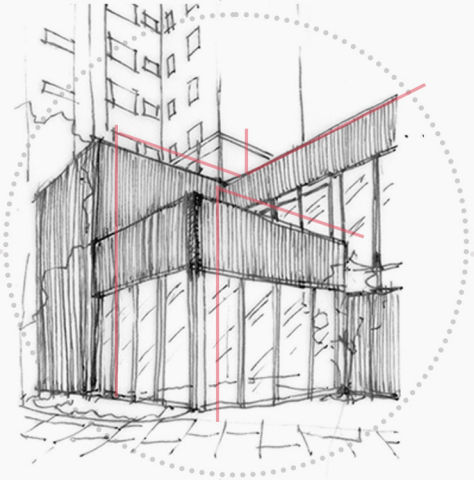
Glulam columns red shard floors



variety in materials

machinery as centerpiece

immersive experience



stepped volumes

cladded exterior

Principles identified:

Immersive chocolate-making process

Materiality inspired by local culture

Combining public and private functions

The choice of materials reflects the spirit of its core values

A variety of functions incorporated into one space

Exposing visitors to the production process

Spaces are overlapping, flowing into each other

Lessons learned:

The building fits onto a small urban plot within its city context, utilizing any opportunity for upward extension. The building consists of four floor levels, that vertically step to accommodate the climate and context. The floors seem stacked from an exterior view, however, on the interior, the floors are overlapping and interconnected. This was achieved by carefully curating the choice of materials as well as massing for each floor level. These careful considerations allow visitors on each floor to spectate other functions as they move through the building.

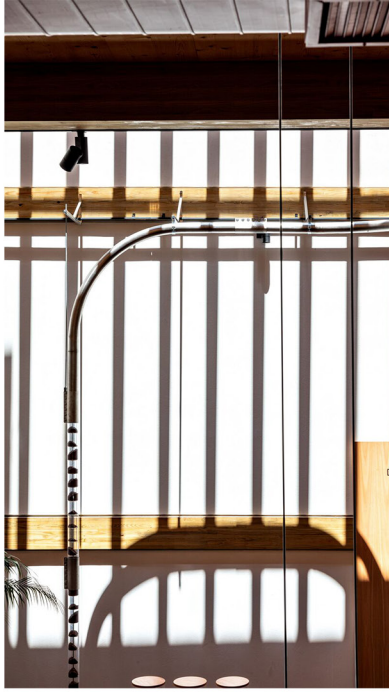
Chocolate making is at the center of the building, quite literally. The process of chocolate making physically surrounds a visitor once they enter the building. Mechanical provisions are in place, to transport ingredients for the chocolate through the building, to and from various stations as it is required for chocolate production. Another method the architects utilized to centralize chocolate making was to place focus on the machinery involved in the chocolate-making process.

Dengo wanted to illustrate the process of bean-to-bar chocolate making. To achieve this goal, they used restored machinery from the 1940s to become centrepieces in main public spaces, immersing a visitor in the chocolate-making process. The building has a sense of authenticity due to the use of typical and reminiscent materials, such as red ceramic flooring, that contributes to a handmade and rustic atmosphere to the interior

Fig 152-154: Analysis sketches (Author).










Dengo Chocolate store, Pinheiros.

Fig 155-161: exterior and interior views, Focussing on the rich and local materiality. The images show the various spaces of interaction and collaboration. (Parente, 2022: online) & (González, 2021: online).

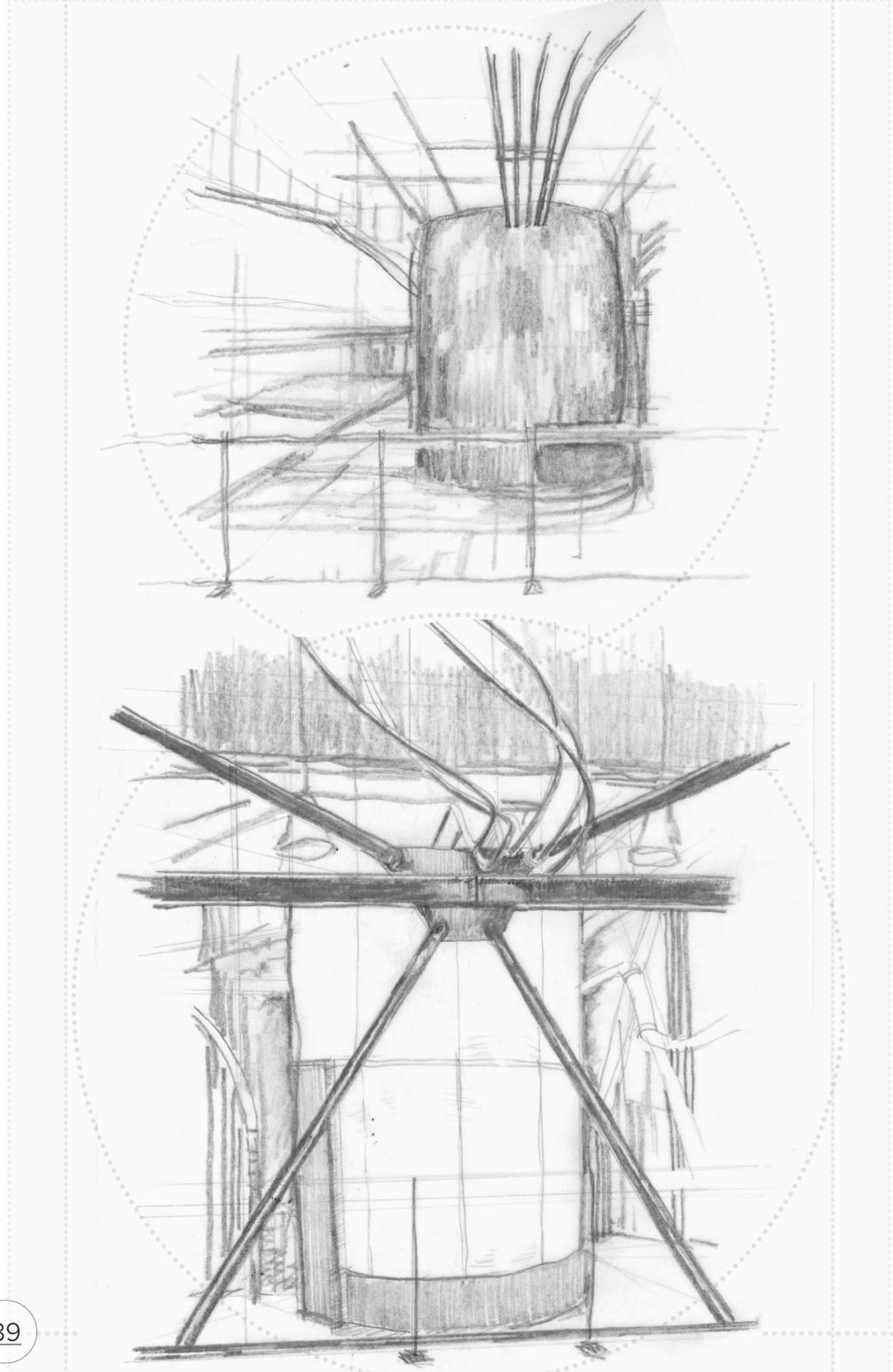


Fig 162: Exploration sketches of the interior possibilities as derived from the precedents (Author).

5.2 Towards a design strategy:

The precedents showcased are not necessarily investigated and analysed for their functional purpose as chocolate-making hubs or beer breweries. They are, however, examples of how the production process of a product can be incorporated into the main public spaces with a variety of other spaces and functions. This incorporation creates an overlapping of functions, creating an enriched immersive experience that encourages visitors to interact with each other and the production process. The production process is placed at the core of each precedent, showcasing how a production function can be the centre point for further development and layouts. All other functions are placed in relation to the primary productive function, with a further combination of public and private functions.

Furthermore, two precedents display their interaction with historic or existing buildings. However, both precedents show interior interventions by changing most interior spaces while preserving prevailing exterior characteristics. Interestingly, one precedent, the Mad Giant Beer Brewery, utilises an intervention method that not only accentuates its embedded structure within its interior spaces but provides an extension to the existing structure that can be seen on the exterior. The embedded steel structure frame and joint systems are replicated on the exterior façade to further accentuate its materiality and importance to the existing brick structure.

The abovementioned aspects can be considered in conjunction with the theoretical stance, as exemplified in chapter 4, to enrich a developing design strategy, which will be explicated in the following chapter.

5.3 Conclusion

Investigating influences that can affect the design development can provide great insight. Identified influences within the three analysed precedent studies offer awareness of design details, spatial organisation, architectural attributes, and influences. It also allows the exploration of initial structural design opportunities. The precedents provided insight into the essential principles and lessons learned that could be applied within the design development phase. The principles of most value are the incorporation of a production process at the centre point of functional development, the placement of other overlapping functions in relation to the main production core, the incorporation of various functions into singular spaces that encourage and allow interaction, and thereby providing opportunities for immersive and engaging experiences with the production process.

Through further analyses of the structural aspects of each precedent, it was established that interior embedded structures do not have to be limited or confined to interior spaces but that the structure may be extended to the exterior to showcase and accentuate the structural attributes of existing buildings. Other structural characteristics, such as the choice of materials, were also important, guiding one to understand the nature of existing materials and the addition of new materials to create a specific atmosphere that complements the accommodated production process. All three precedents utilised their incorporation of materials to create an industrial atmosphere in and around their production cores.

Chapter 5 is dedicated to investigating external influences on the design, showcasing built examples, their success and failures. That points out that each case study offers insight that can be applied or avoided during the design development. The following chapter will explicate the design process, illustrating the decision-making process and application of principles as set out in chapters 1 to 5.



Fig 163: Existing elevation sketch as blank canvas for influences (Author).

06 Design Development

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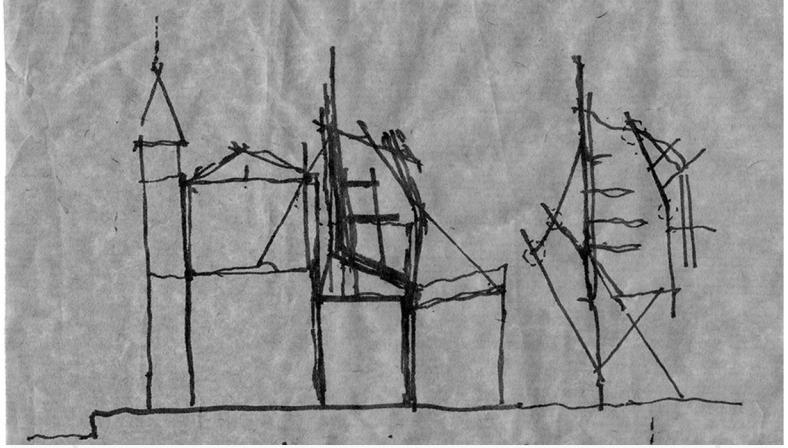
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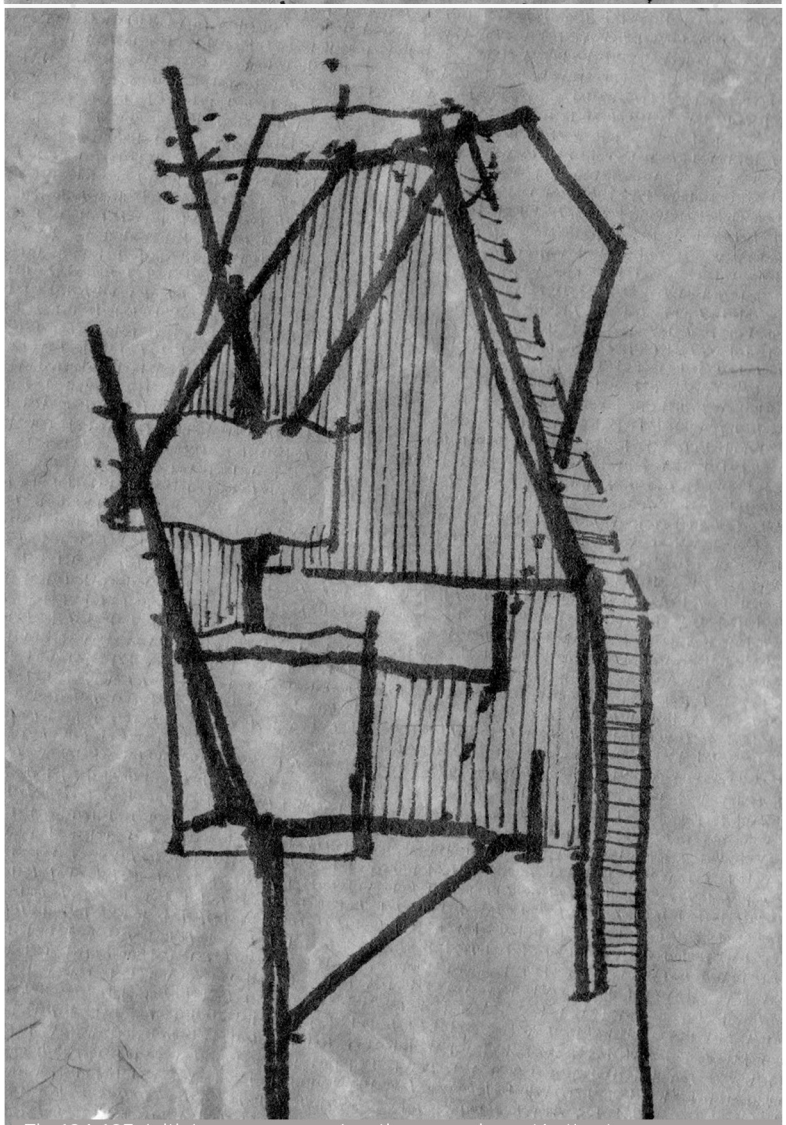


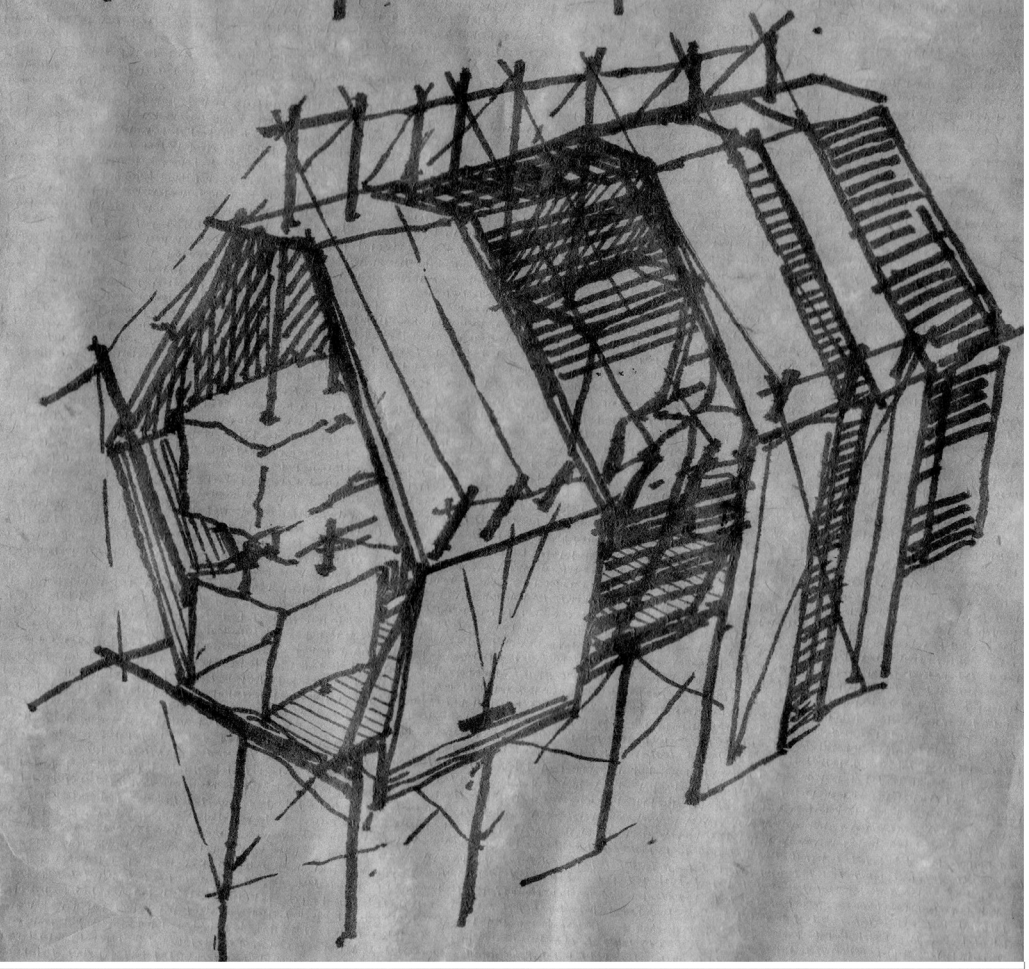
Fig 164-165: Initial response exploration exercises (Author).

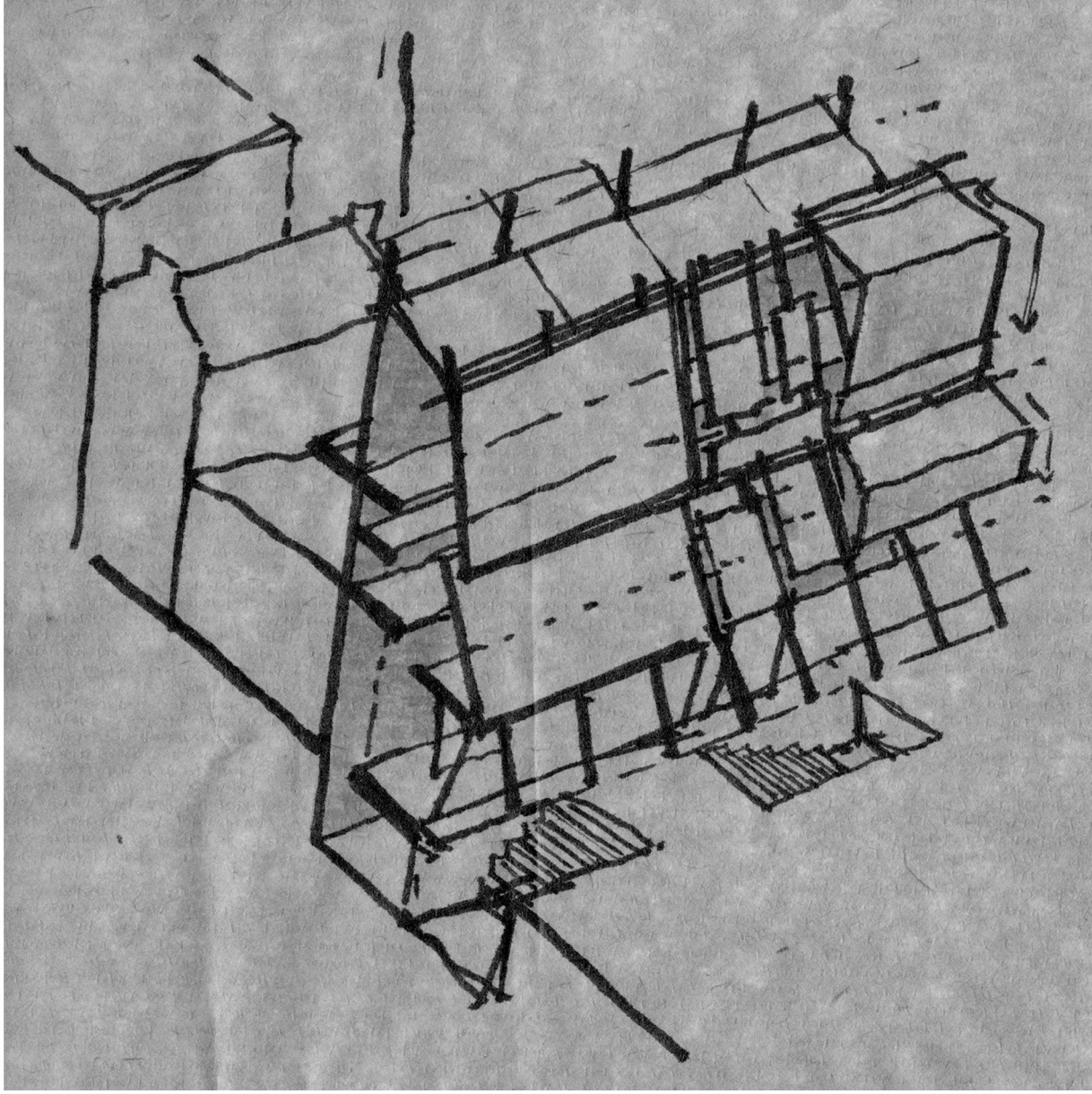
6.1 Initial visualisation:

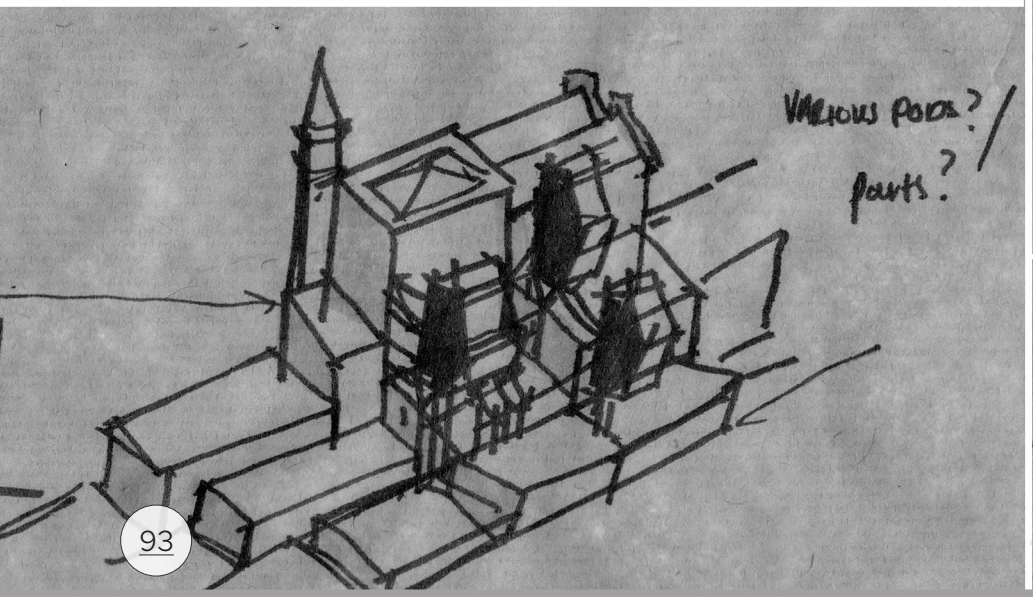
The amalgamation of theoretical concepts, site analysis, and precedent studies creates the fundamentals for design development. Also, exploration exercises done in the project's conceptual phase were greatly attributed to initial responses in design visualisation. First response exploration sketches were done to get all relevant ideas on paper so they could be workshopped. These sketches are an amalgamation of three-dimensional, elevational, and sectional explorations. That aims to develop the 'feel' of the building based on the guidance of the initial creative triggers and the developing theoretical stance. The investigations done in the conceptual phase were not yet concerned with the plan layouts and spatial organisation but with the intention of possible creation.

The concept explorations further cemented the ideals intended for the project, exploring three-dimensional form giving with more theoretical support and guidance. From the concepts, various visualisations regarding sections, elevations, and three-dimensional massing were explored. That investigates multiple shapes, especially regarding the first concept: *Parasthetic* and the third: *Mutuasthetic*. Establishing the *Parasthetic* concept as the joining link between the existing and the 'artificial limb' or prosthetic that is rooted in the *mutuasthetic* concept. Since the current building has an embedded steel structure, it was determined that the *parasthetic* concept will be applied to become a steel structure attached to the existing as the extension. That aims to join old and new in a skeleton type of structure, similar to a parasite finding various ways of connecting to the host to become a part of it, utilising existing spaces within the building and connecting the extension or prosthetic to them to create a cohesive experience.

Together the concepts and explorations lead to the idea of a skeleton structure, covered, or cladded in a 'skin' extending over the building complex to frame and compliment views. In the following sections, the design development will be set out, as per the chocolate-making process, consisting of 3 parts with their subdivisions.







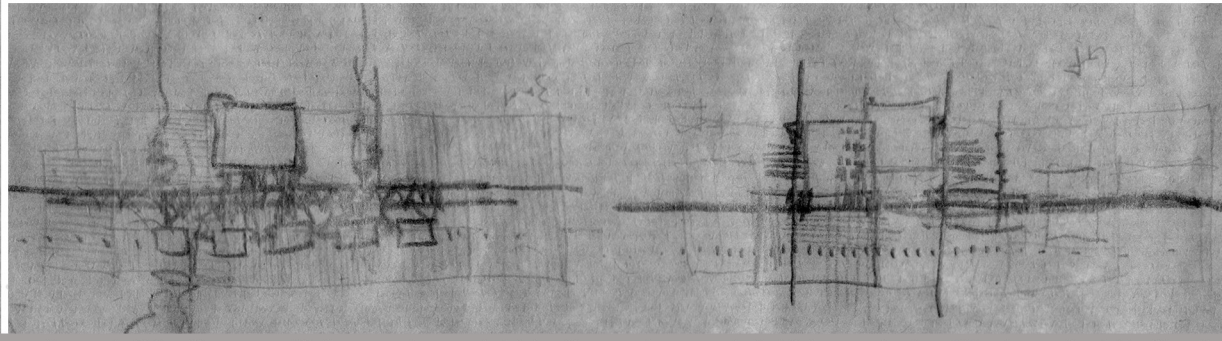


Fig 166-169: Initial response exploration sketches top left: Exploring interior massing options, left bottom: multiple massings, right bottom: plans and right top exterior 3D elongated (Author)

6.2 Further Development

6.2.1 PART 1: SOURCING

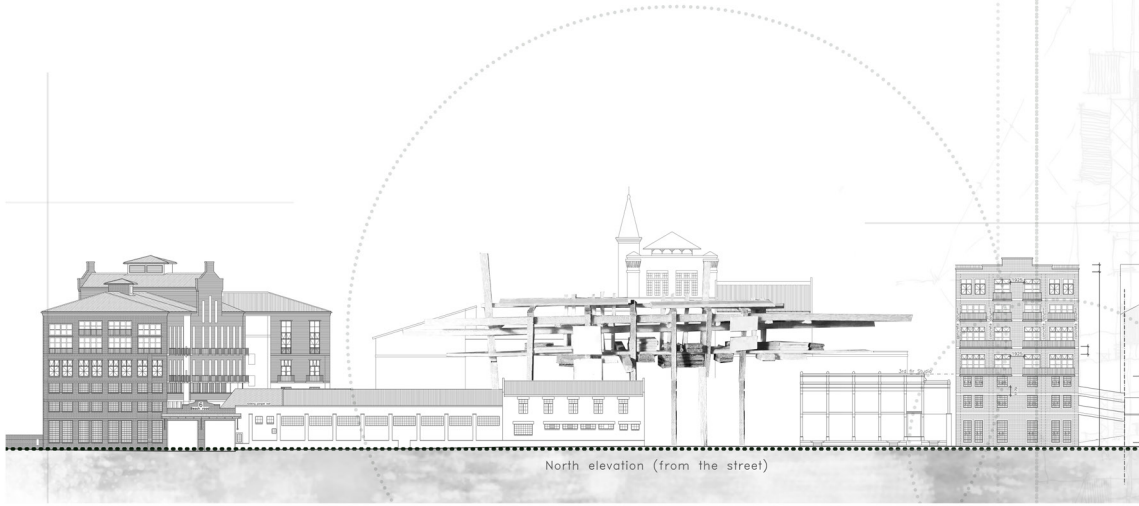
6.2.1.1 Harvesting

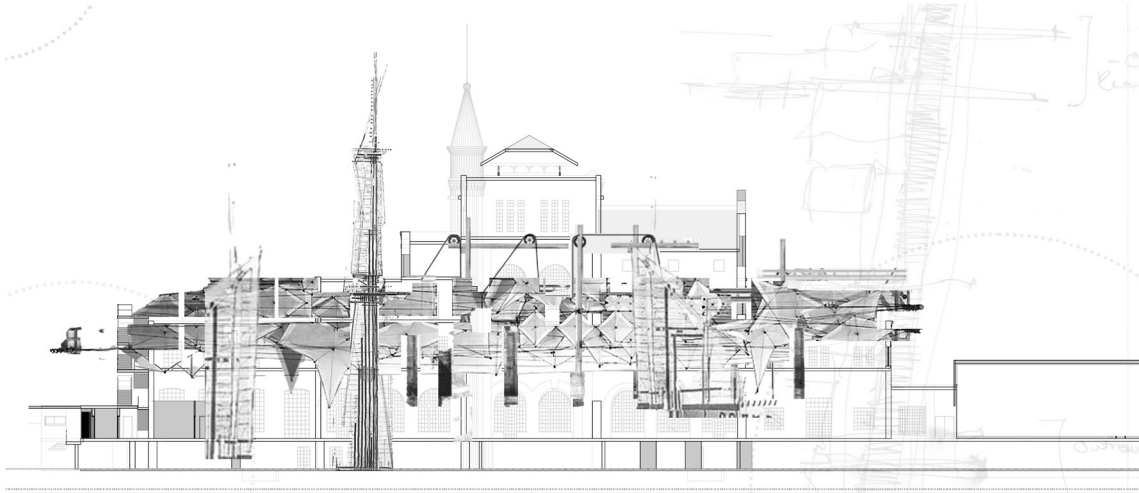
Harvesting - starting at a point and collecting possible ideas.

As the design started to develop, certain explorations were emphasised more than others. The aforementioned concepts, *Parasthetic* and *Mutuasthetic*, became the main source of guidance regarding initial theoretical support. Therefore, concept and massing models were developed for a possible plan or three-dimensional massing. More exploration models followed that was fitted onto a scaled site model. These massing models aided in developing an initial architectural language that would encompass a skeletal framework to be attached to the existing building.

Utilising the massing models for further investigations, several elevational explorations were considered to create an architectural language fitting for the prosthetic extension of place. Initial explorations were primarily horizontal studies to not challenge the Old Castle Brewery as a beacon in Woodstock. Photographs of the massing models were overlaid with a generated elevation view to simulate the architectural atmosphere that will be created. However, after considering mainly horizontal aspects, it was clear that a vertical element would be necessary. Without a vertical component, the existing and new identities were not yet in conversation.

More elevational investigations were created to simulate horizontal and vertical elements by compiling various elements of architectural explorations, which proved to be more successful. More massing models were built to analyse the effect of vertical elements on the existing building, varying in shape to explore several options for section and elevation, leading to the development of three models.





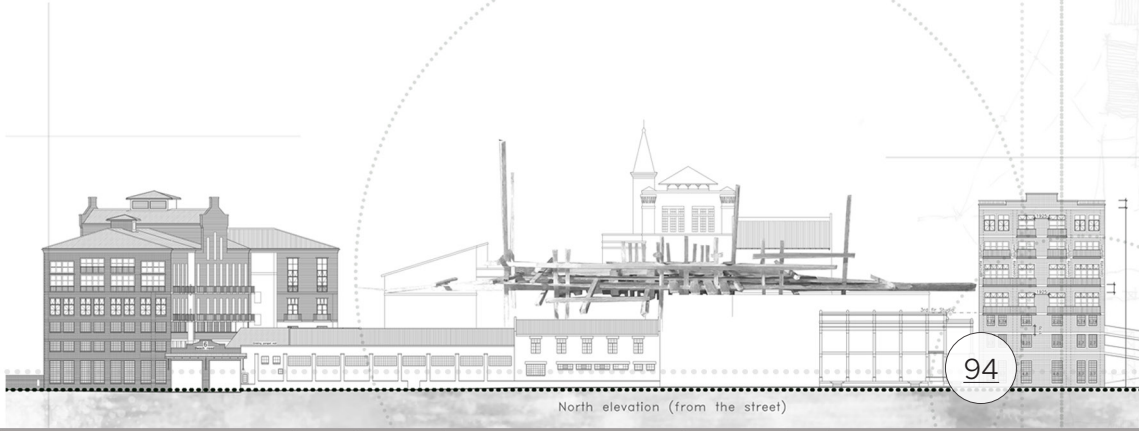


Fig 170-172: Elevation explorations with massing model photos overlaid & compiled images (Author).

6.2.1.2 Fermentation

Fermentation - reflecting on initial ideas to determine their appropriateness.

The first model showcased the reuse of many parts of the existing, dependent on the removal of material closer to the more historical side of the building. Although a possible option, the design strategy was too reliant on the removal of historic material. Its vertical elements were overpowering, and the atrium was too large, stretching across the length of the whole building. The second model investigated a triangular shape in section, with three vertical elements spread along a datum separated from the historic building. The composition of this model was more favourable, showcasing a lighter structure joined to the building, with vertical elements that converse with the existing rather than subjugate it. However, the language of the model was not quite right yet.

A third model was assembled, showcasing a skeletal structure within the existing building, yet portrayed as an extension joined to the building. The composition between the vertical elements was more favourable and diverse, nominating one tower as a beacon and method of conversation with the existing. While creating two other vertical elements that are not as emphasised to complete the composition.

6.2.1.3 Drying the beans

Drying the beans - finalising the use of certain ideas.

The exploration of three-dimensional massing models was utilised for volumetric and atmospheric investigations and to develop initial responses on plan. All two-dimensional explorations led to the same minimally invasive approach that was not becoming fruitful. The spatial planning and organisation commenced after the exploration sketches,

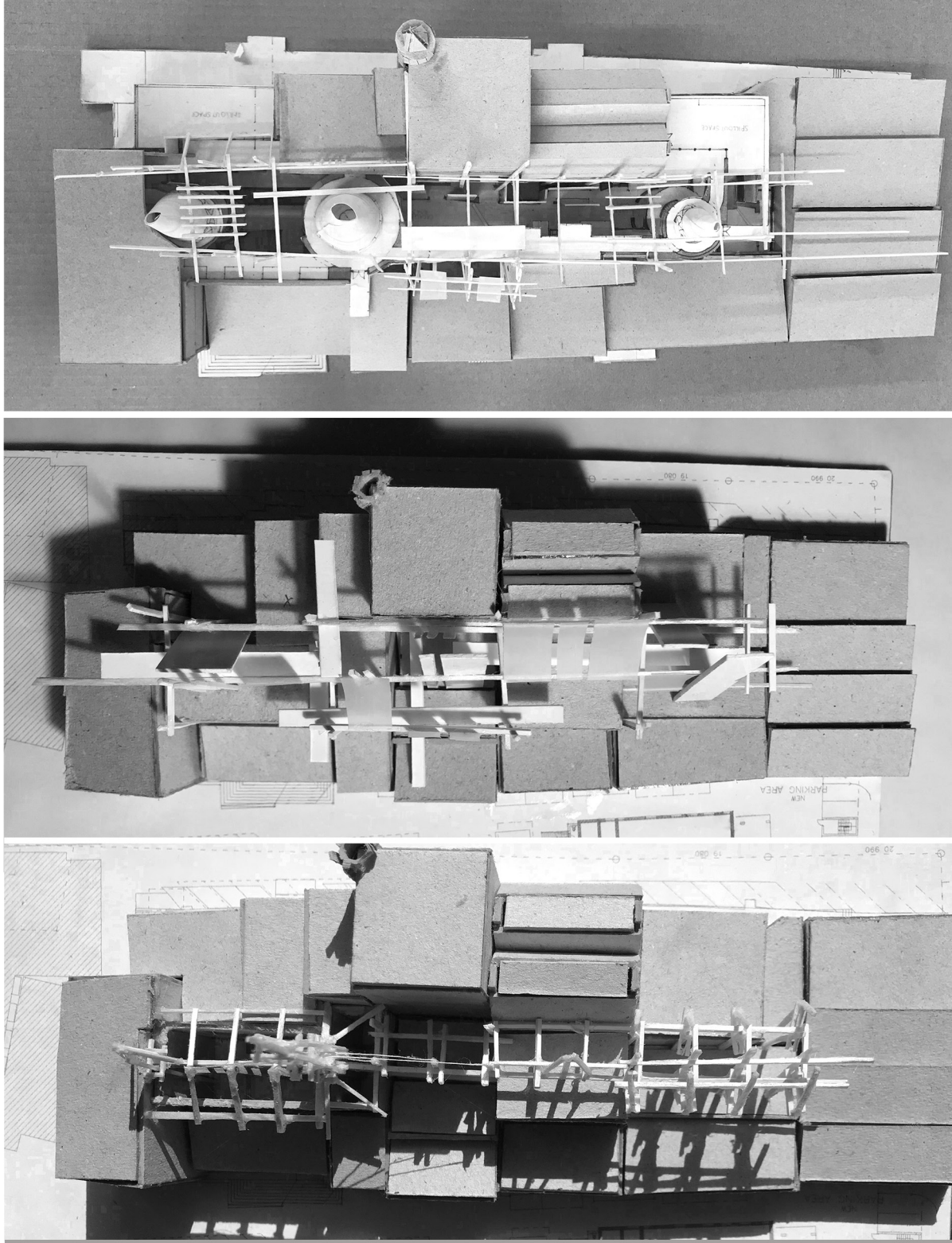


Fig 173-175: Massing models as referred to in text. Top: Model 1, Middle: Model 2. Bottom: Model 3 (Author).

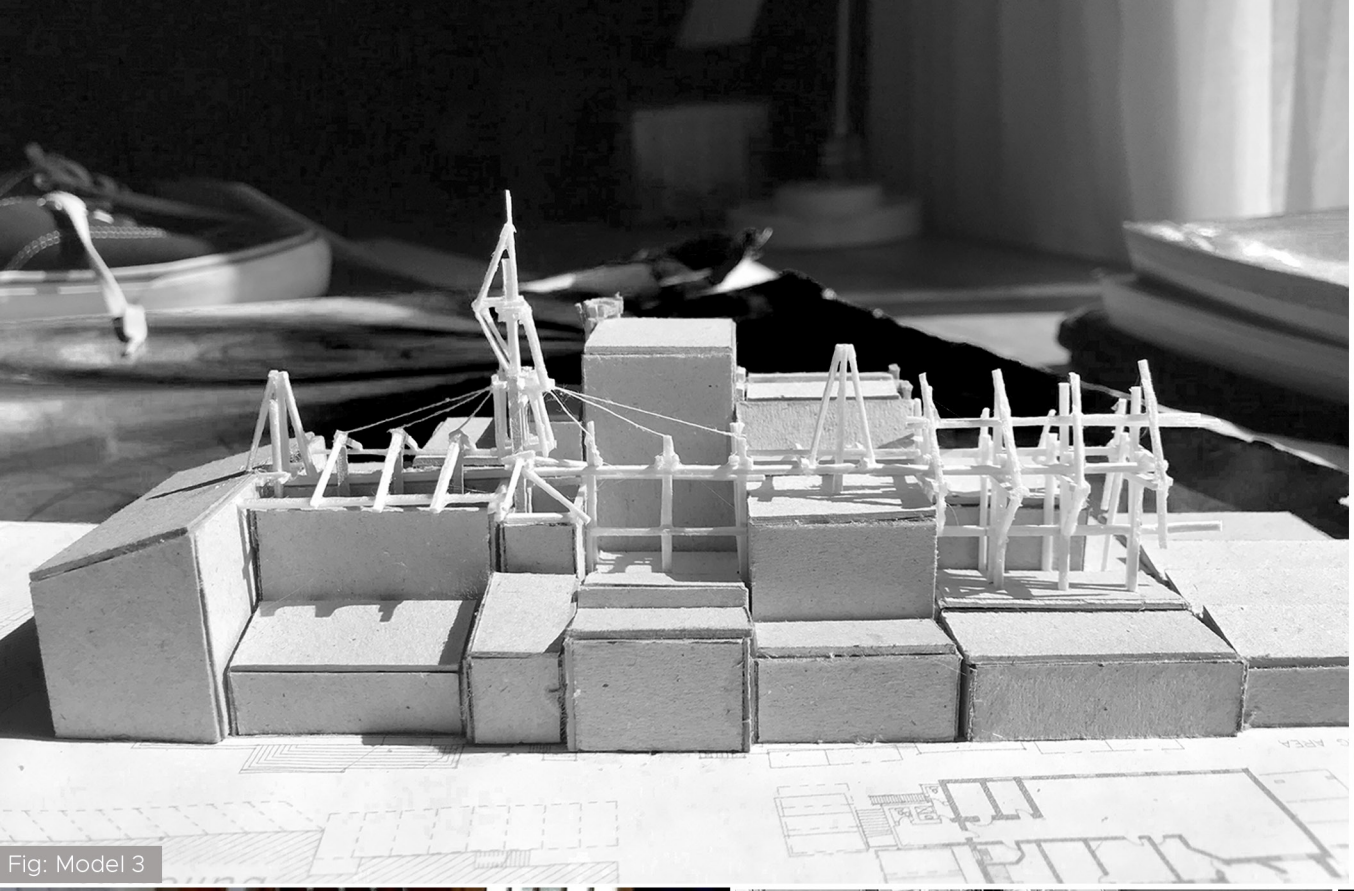


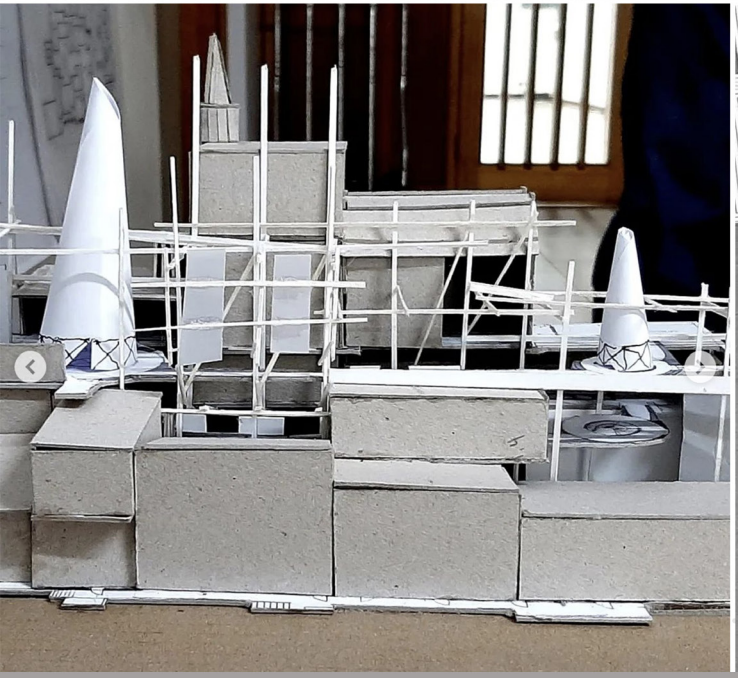
Fig: Model 3

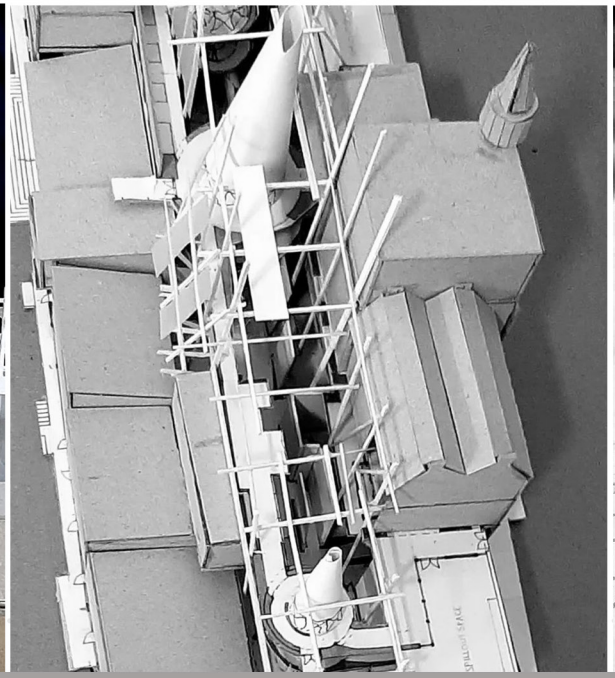


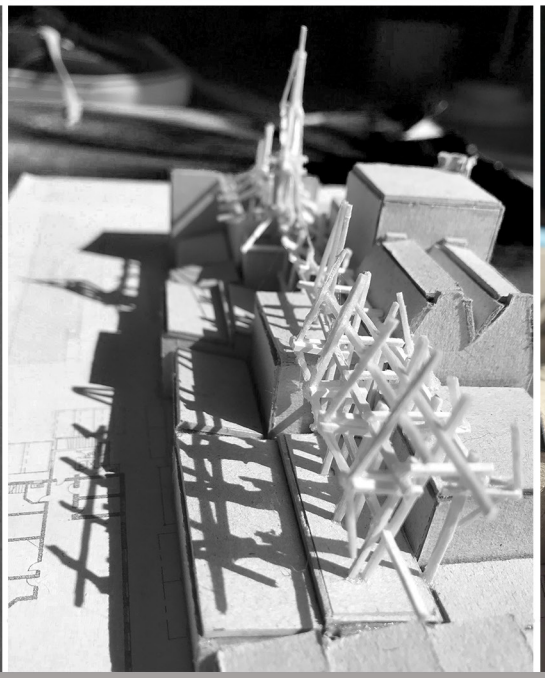
Fig: Model 2



Fig: Model 2







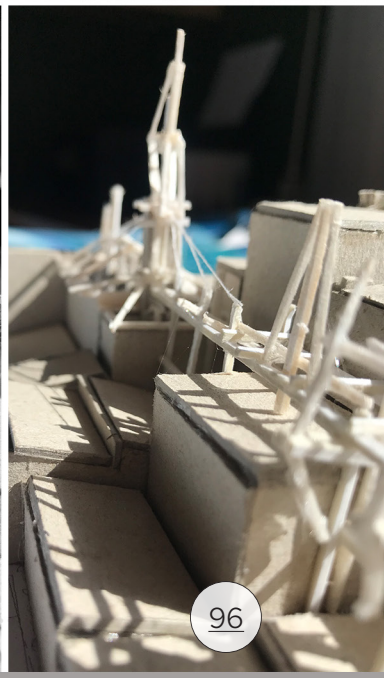


Fig 176-182: Before mentioned massing model 1 - overpowering vertical elements with a significant atrium. Heavier massing and more detrimental to the existing (Author).

mentioned in section 1.1, were workshopped, and investigated. Multiple attempts to organise functions were produced, showcasing a variety of strategies to find the most appropriate intervention method. Initial spatial developments were not rooted in a particular form giving; instead, they were explored as free-flowing spaces that only aimed to reinvent the interior completely. The plan became an amalgamation of triangular and circular shapes that completely transformed the grid-box composition of the existing building, as it was established that the exterior of the historic building remains most significant to preserve, while the interior may be altered to fit its new function.

The plan explorations varied from conservative interventions to quite drastic alterations. However, all the explorations shared a common theme that allows the main production process to be placed at the centre of the intervention. It was determined that functions such as the chocolate-making process and circulation cores must be contrasted in shape to all other functions to accentuate their difference and importance. All other functions became an overlapping of spaces, as derived from the influence of analysed precedent studies. The plan explorations continued without delivering the desired effect.

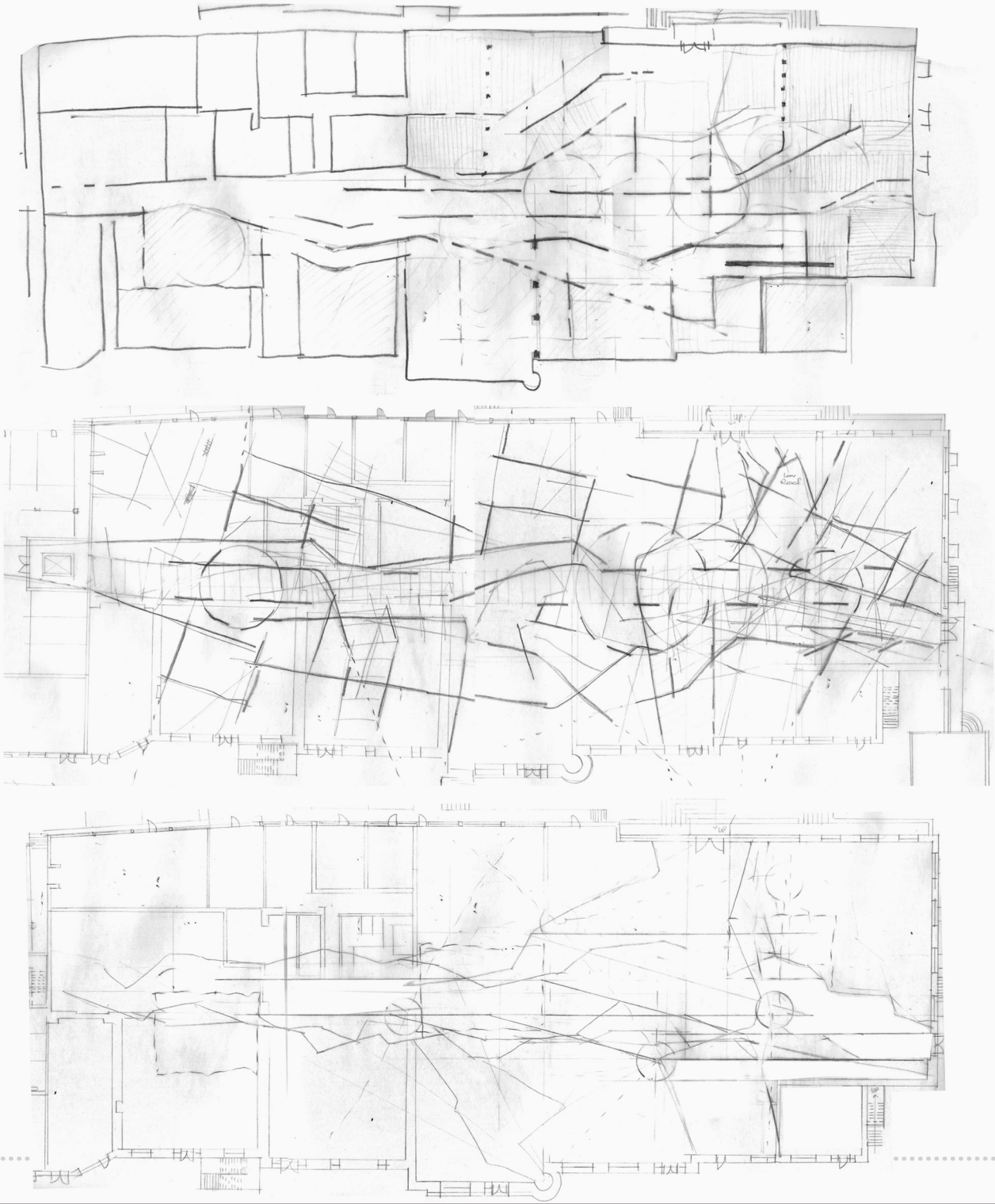


Fig 183-185: Various plan explorations ranging from more conservative to quite drastic interventions and contrasting (Author).

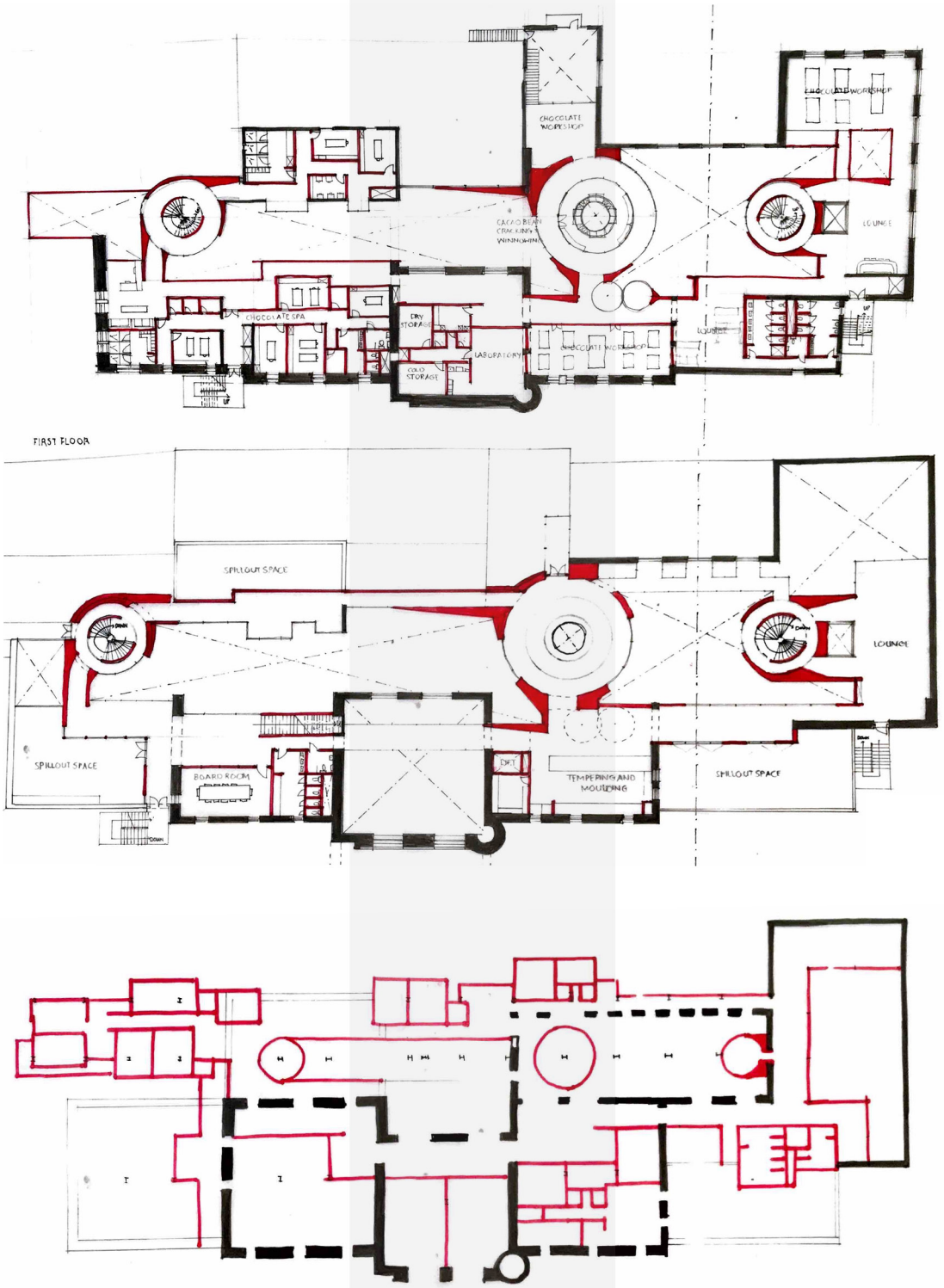


Fig 186-189: Top & mid: First plan development with large atrium, bottom: second plan development (Author).

6.2.2 PART 2: PREPARATION

6.2.2.1 Bean cleaning

Bean cleaning - Refining and polishing finalised options.

The plans started to revert to a grid-box composition; however, now they incorporated more aspects from previous explorations. Initially, too many functions were still organised within the interior of the existing building, eliminating the purpose of an extension, as all the functions were fitted into the existing space. Multiple massing sketches were drawn to assess the impact of new additions in relation to the existing building. New additions are represented in red, while the existing floors and structures are represented in black. The plans, as illustrated in figures 186-189, showcase the progression of design development. The first sketches display the large atrium of the first exploration model, as referred to in section 1.1. The functions were still disjointed and too greatly separated. The second plan development phase showcased the extension of function beyond the borders of the existing building. These developments were used to further the design strategy, as it proved the most successful thus far.

Preliminary plans were drafted, encompassing the most successful attributes identified through exploration. These attributes are also slotted in with the theoretical aims and stance. It considered the preservation of historical characteristics of the existing, created an overlapping space to encourage engagement and interaction, placed the chocolate-making process at the centre of the design, and extended beyond the existing building to become a prosthetic extension of place adjoined to the existing. Furthermore, these plans displayed a mutable adaptive reuse strategy that reuses many of the existing interior spaces, walls, and structure while either removing or adding supplementary structure and composition to create an engaging industrial atmosphere.

6.2.2.2 Cracking and Winnowing

Cracking and winnowing - Identifying weaknesses and strengths - inspecting all notions and letting go of weak ideas.

As the preliminary plans developed, reflection was required to distinguish between the strongest and weakest ideas, separating the wheat from the chaff, similarly, to separating cacao nibs from their husks in the chocolate-making process. Therefore the following distinctions were made. The chocolate-making process was decided to be in a stacked format, placing functions on top of each other rather than spreading all functions on a single floor. It was further established that the functional spatial organisation was to be organised according to the chocolate-making process, as it would be stacked according to the various floor levels. The functions will be organised and vertically incorporated according to most public functions to semi-public and more private functions.

The basement level is dedicated to services, accommodating functions such as cacao bean cleaning, the receiving of deliveries, storage, and waste management. The ground floor will be the most public, offering interaction and engagement through functions such as a chocolate beverage bar and a chocolate retail experience, where visitors can browse through a chocolate library and exhibition to choose chocolate individually. These chocolates can also be customized and personally wrapped at a wrapping station. All floors will also allow ample space for current occupants of the existing building, where some spaces are left as is to accommodate past use of the existing building. The second floor will accommodate more interactive functions, such as chocolate workshops and a lounge for visitors to spectate the chocolate exhibition as well as the chocolate-making process. The third floor will house a laboratory for the development of chocolate, a tasting lounge for public engagement and the entrance from the existing building into the chocolate spa within the prosthetic extension. Furthermore, it was established that the main materials to be used, in conjunction with the existing brick and cast-iron steel, will be a steel structure for the prosthetic addition and wood furnishing and accentuations to contribute to the atmosphere of a chocolate factory.

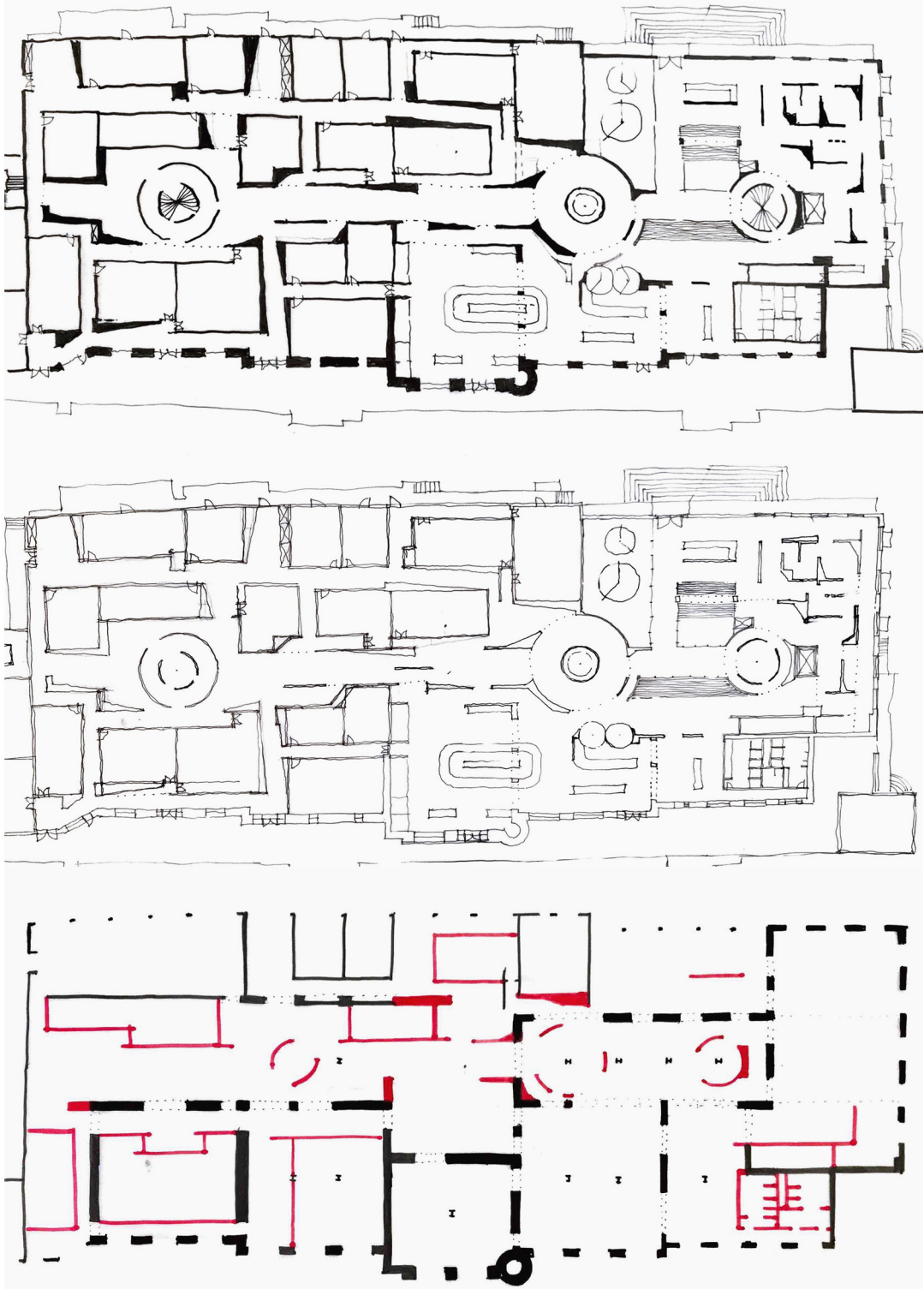


Fig 190-193: Disregarded plan explorations with heavy massing, and congested floor space (Author).

Specific ideas were disregarded along the way for their failure to produce the desired effects. Some instances include the elimination of only one vertical element within the prosthetic addition, the creation of an elongated atrium that stretches the length of the existing building, the complete renewal of the interior, and the conservative grid-box approach to spatial organisation. On plan, another notion that was eliminated included the explorations of larger wall massings that guide a visitor through the spatial composition of each floor.

This notion was disregarded as it congested the floor plans rather than providing a guided experience through the chocolate factory. Furthermore, it was also considered that the vertical elements are not aligned on a datum; instead of creating a dynamic between the vertical elements, it only seemed misaligned and out of place.

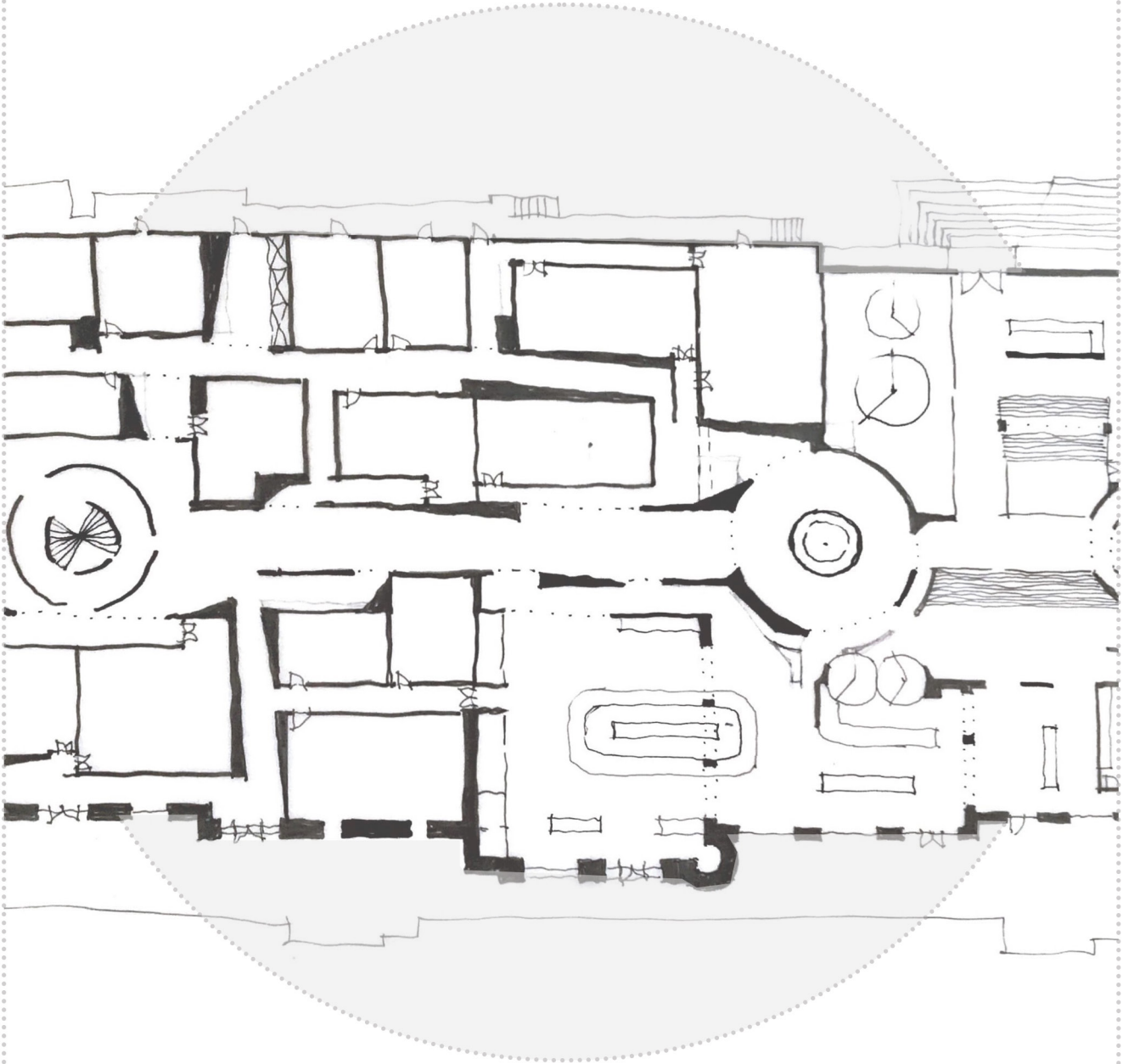


Fig 194: Partial plan Heavy massing plan attributes that congestes the spatial organisation, this plan was disregarded (Author).

6.2.3 PART 3: COMBINING

6.2.3.1 Grinding and Conching

Grinding and Conching - combining various influences and ideas.

The plans reached a point in development that was sufficient to further investigate options for three-dimensional massing. The plans dictate the spatial organisation and composition of functions, which constitutes a base for further development of the building's exterior design. From the function placement on plan, the vertical consequence thereof was explored. Without a vertical element, the prosthetic extension seems merely affixed to the existing. Multiple attempts were made to establish a language for the three-tower composition. Early depictions of a conical shape were utilised and developed to create an identity for the two 'lesser' towers on either side of the largest central tower.

The two smaller towers were cemented in their role as circulation shafts, depicting their circular shape from the two-dimensional plan into a three-dimensional augmentation. The larger tower was intended to be another beacon for the Old Castle Brewery. The new addition is careful not to overpower or replace the existing brick tower but to stand in submission and conversation with it.

The new tower becomes a deconstructed version of the brick turret, as seen in the explorations in fig 196. All three towers are designed to be diaphanous to allow the accentuation of the existing buildings' structure and materiality. The two smaller towers became an amalgamation of layers, consisting of a primary and secondary system supported by the existing and new embedded steel structure.

As derived from the precedent, the embedded steel structure is extended from the interior to beyond the borders of the existing building. That hints at the underlying steel structure within the massive brick structure while showcasing the materiality of the prosthetic addition.

6.2.3.2 Tempering and Moulding

Tempering & Moulding - applying all that is learned and creating a final design.

Parts 1 to 3 roughly outline the design development. Each part and subsections provide insight into the most important aspects of the design process. Along with the influence of the theoretical explications and the precedent studies, the conceptual phase was the most significant contributor to the end design result. The following section contains the final design scheme, as it was developed through multiple explorations, investigations, questioning and reflection.

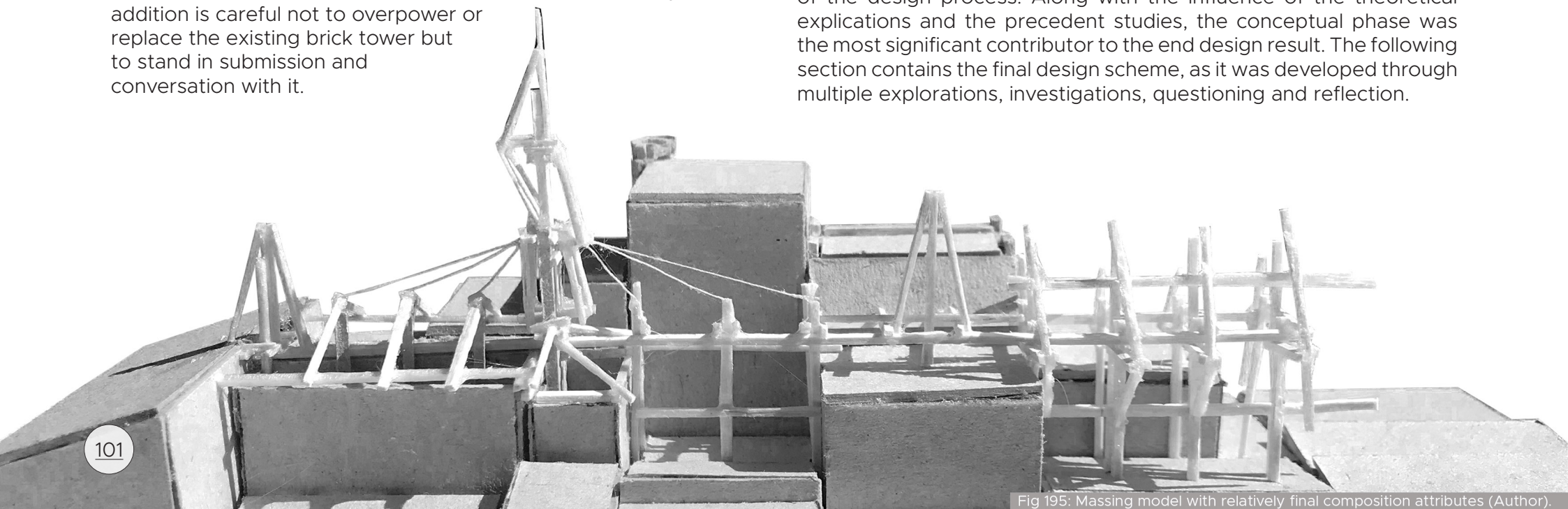


Fig 195: Massing model with relatively final composition attributes (Author).

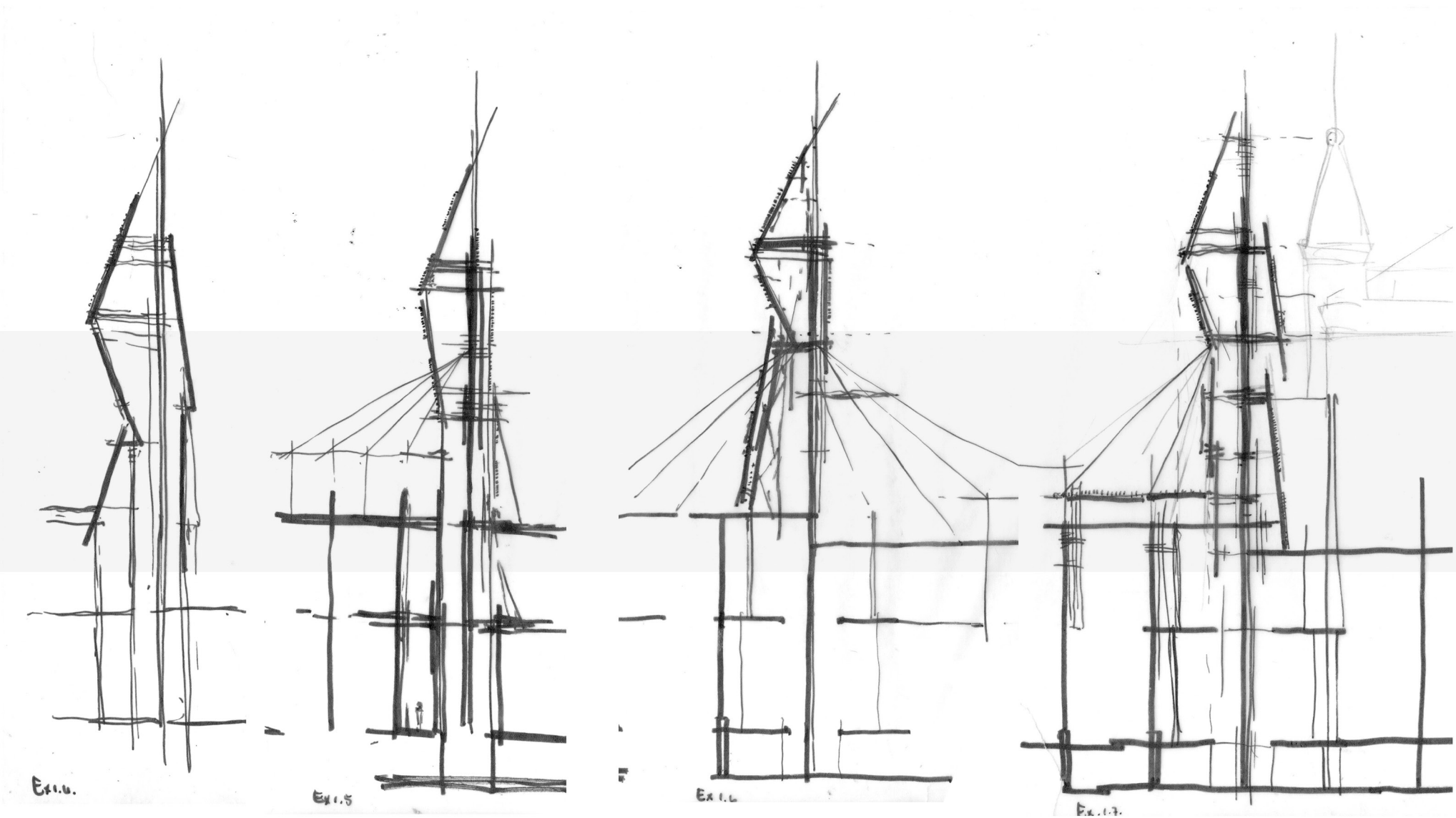


Fig 196: Design development sketches of the central tower (Author).

Existing Old Castle Brewery building:

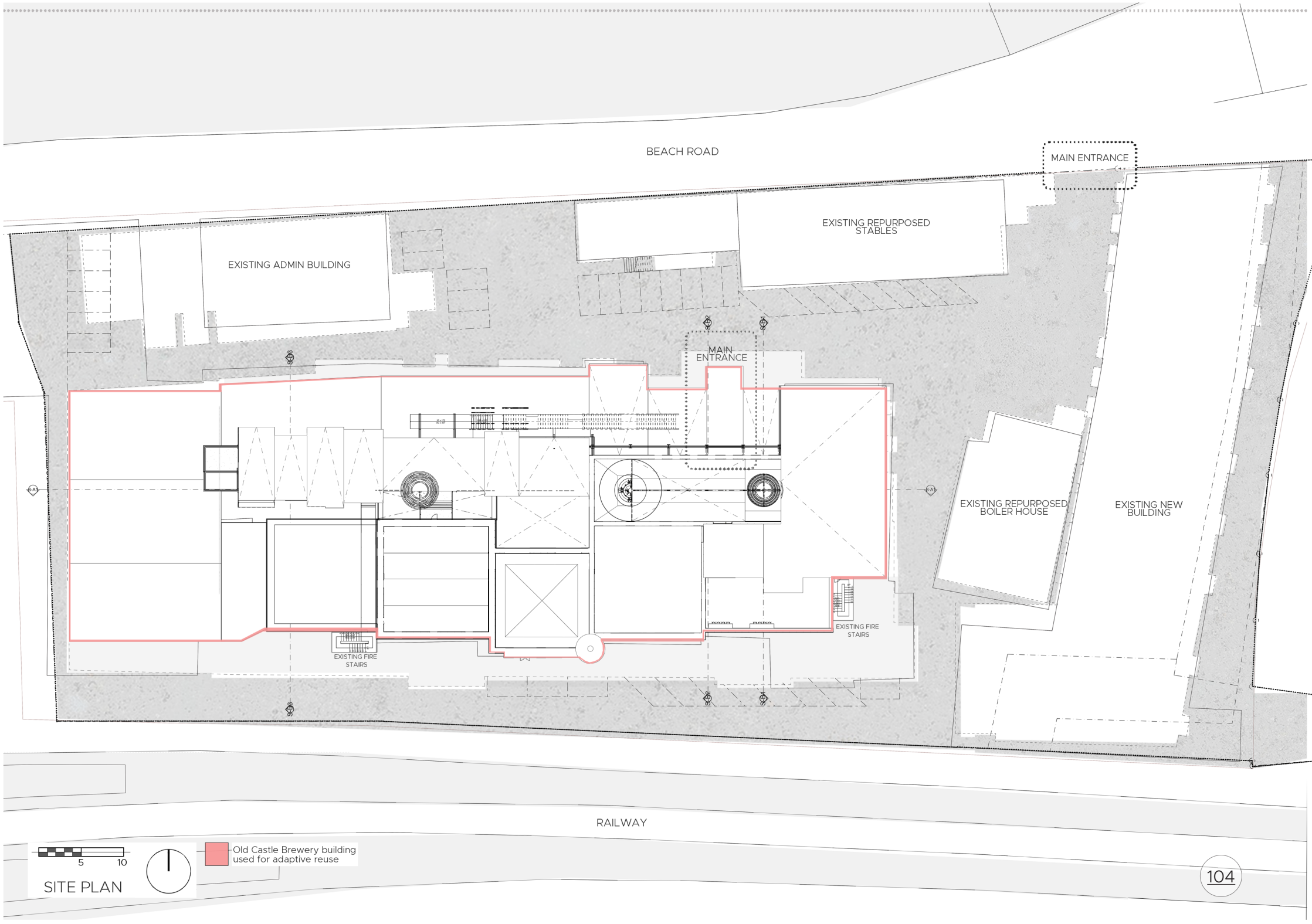
Fig 197: Perspective of existing building without prosthetic (Google Earth, 2022: online).







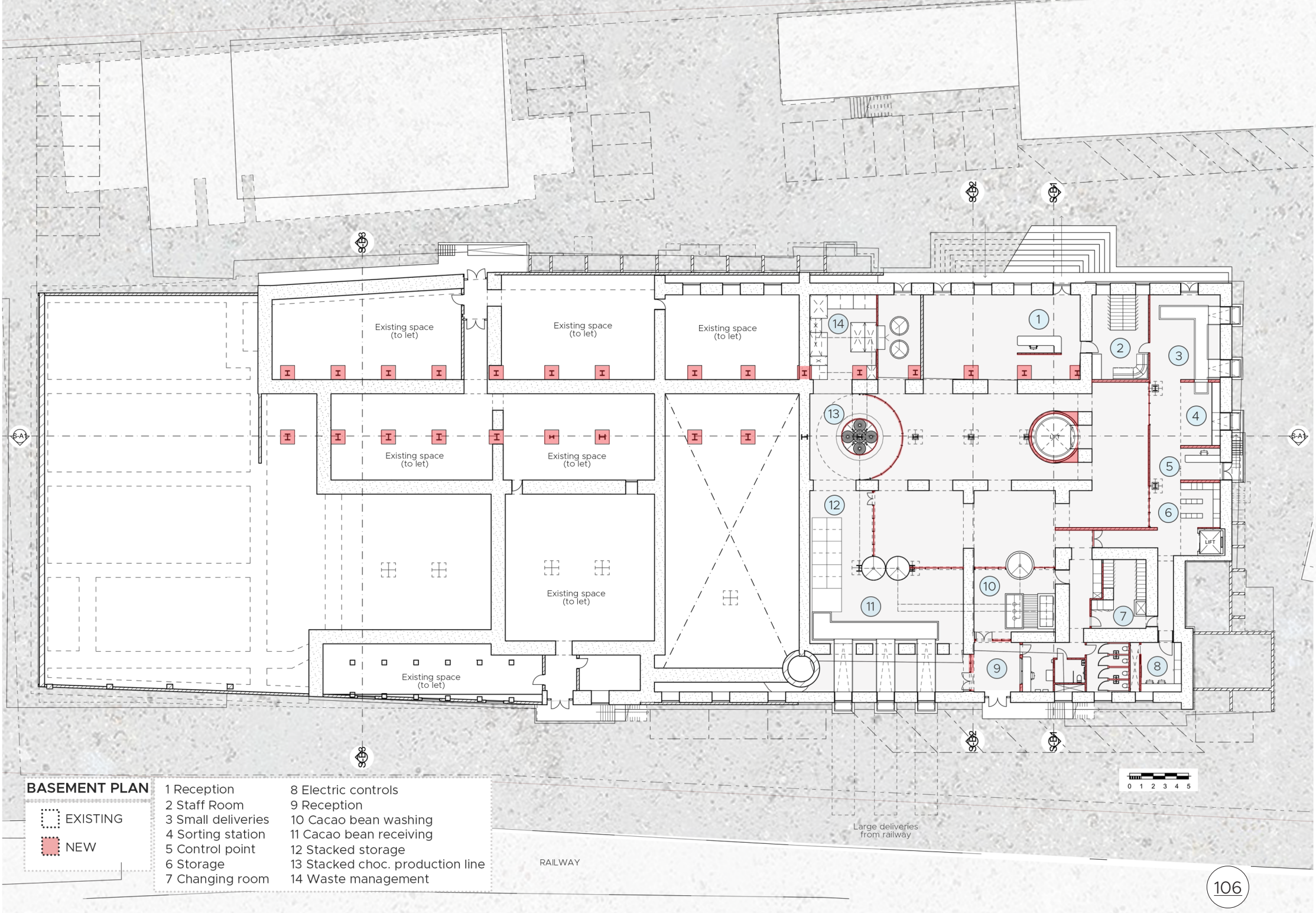
Fig 198-199: Perspective of existing building without prosthetic (Author) + (Pournejati, 2022: photo).


BEACH ROAD
MAIN ENTRANCE
EXISTING REPURPOSED STABLES
EXISTING ADMIN BUILDING
MAIN ENTRANCE
EXISTING REPURPOSED BOILER HOUSE
EXISTING NEW BUILDING
EXISTING FIRE STAIRS
EXISTING FIRE STAIRS
RAILWAY
5
10
Old Castle Brewery building used for adaptive reuse

SITE PLAN



Fig 201: Isolated prosthetic addition to the existing in context (Author).

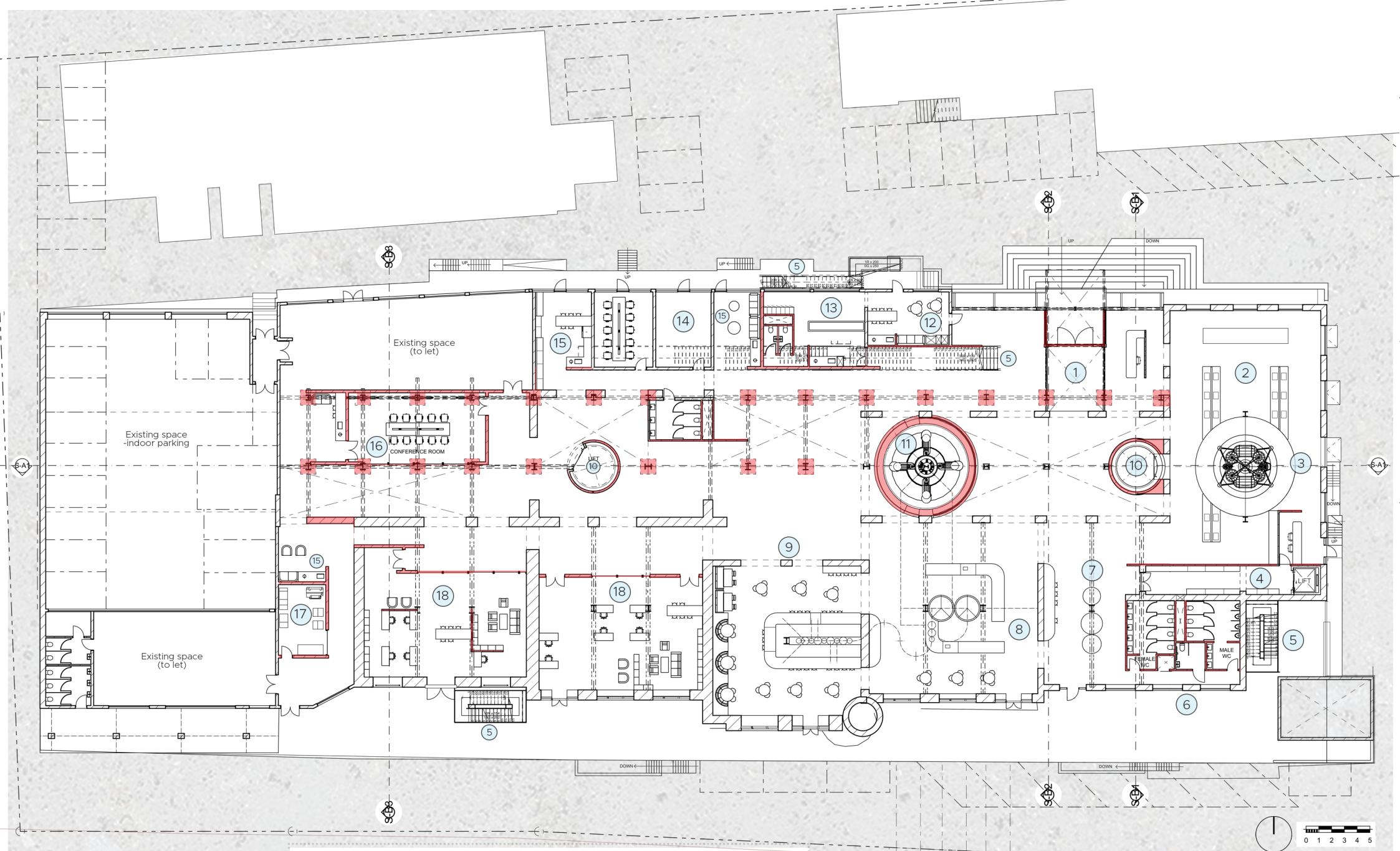


BASEMENT PLAN

EXISTING

NEW

1 Reception
2 Staff Room
3 Small deliveries
4 Sorting station
5 Control point
6 Storage
7 Changing room
8 Electric controls
9 Reception
10 Cacao bean washing
11 Cacao bean receiving
12 Stacked storage
13 Stacked choc. production line
14 Waste management



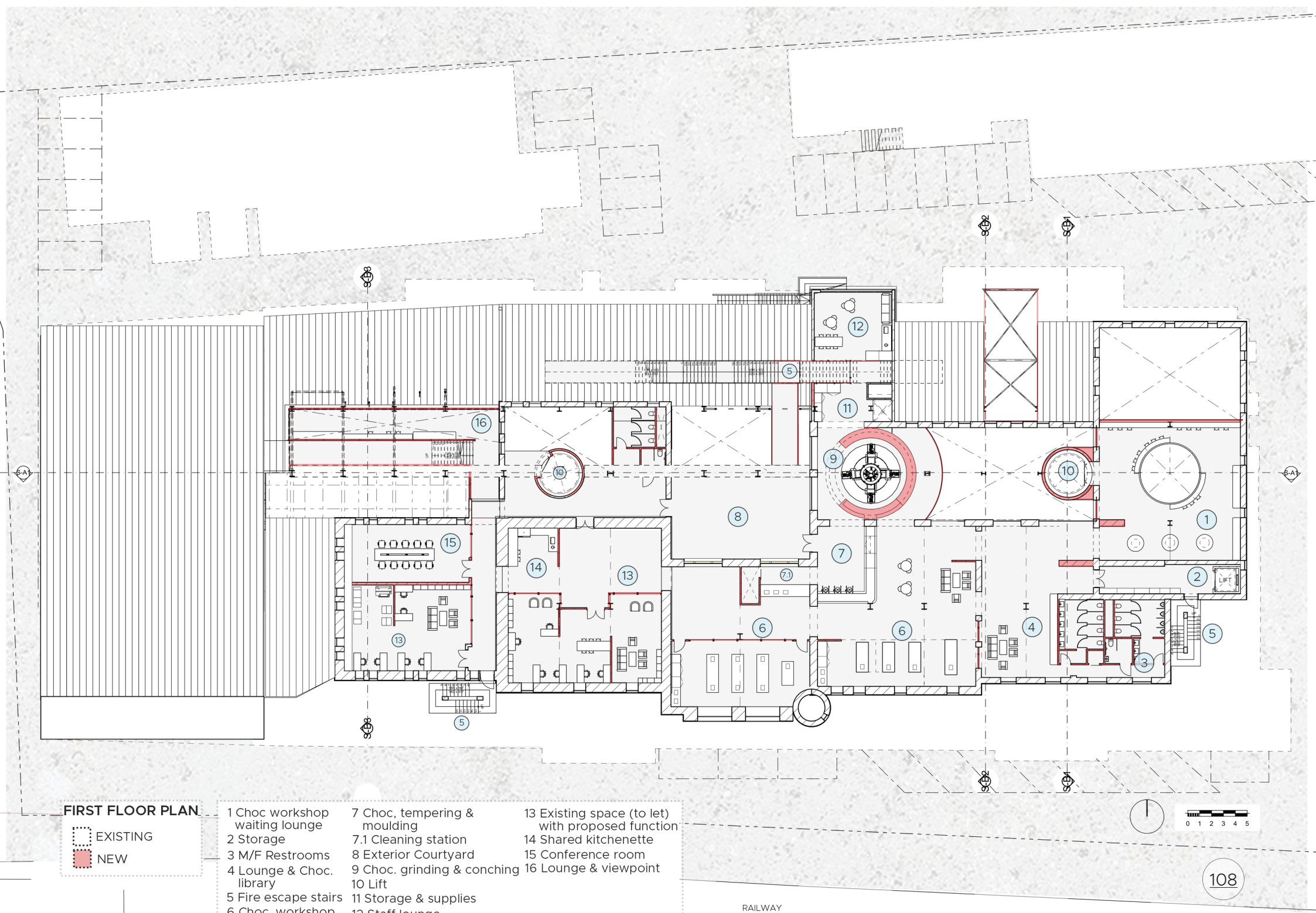
GROUND FLOOR PLAN

107

EXISTING

NEW

1 Reception
2 Retail-experience
3 Choc. fountain exhibition
4 Storage
5 Fire escape stairs
6 M/F Restrooms
7 Wrapping station
8 Retail/ paypoint
9 Choc. beverage bar & lounge
10 Lift
11 Cacao bean roasting
12 Staff lounge
13 Changing room
14 Offices
15 Shared kitchenette
16 Conference room
17 Shared Admin hub
18 Existing space (to let) with proposed function

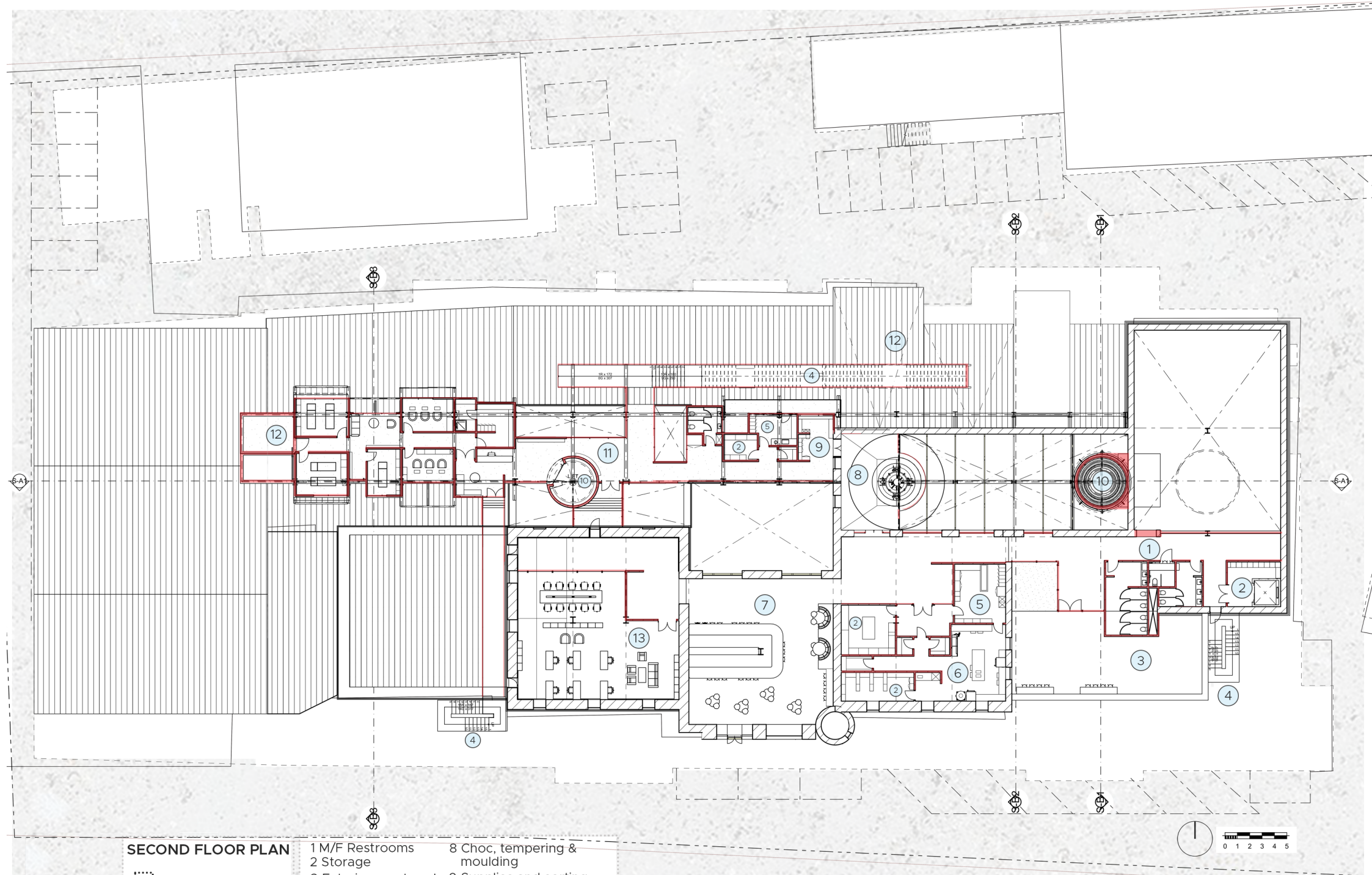


FIRST FLOOR PLAN

EXISTING

NEW

1 Choc workshop waiting lounge
2 Storage
3 M/F Restrooms
4 Lounge & Choc. library
5 Fire escape stairs
6 Choc. workshop
7 Choc, tempering & moulding
7.1 Cleaning station
8 Exterior Courtyard
9 Choc. grinding & conching
10 Lift
11 Storage & supplies
12 Staff lounge
13 Existing space (to let) with proposed function
14 Shared kitchenette
15 Conference room
16 Lounge & viewpoint

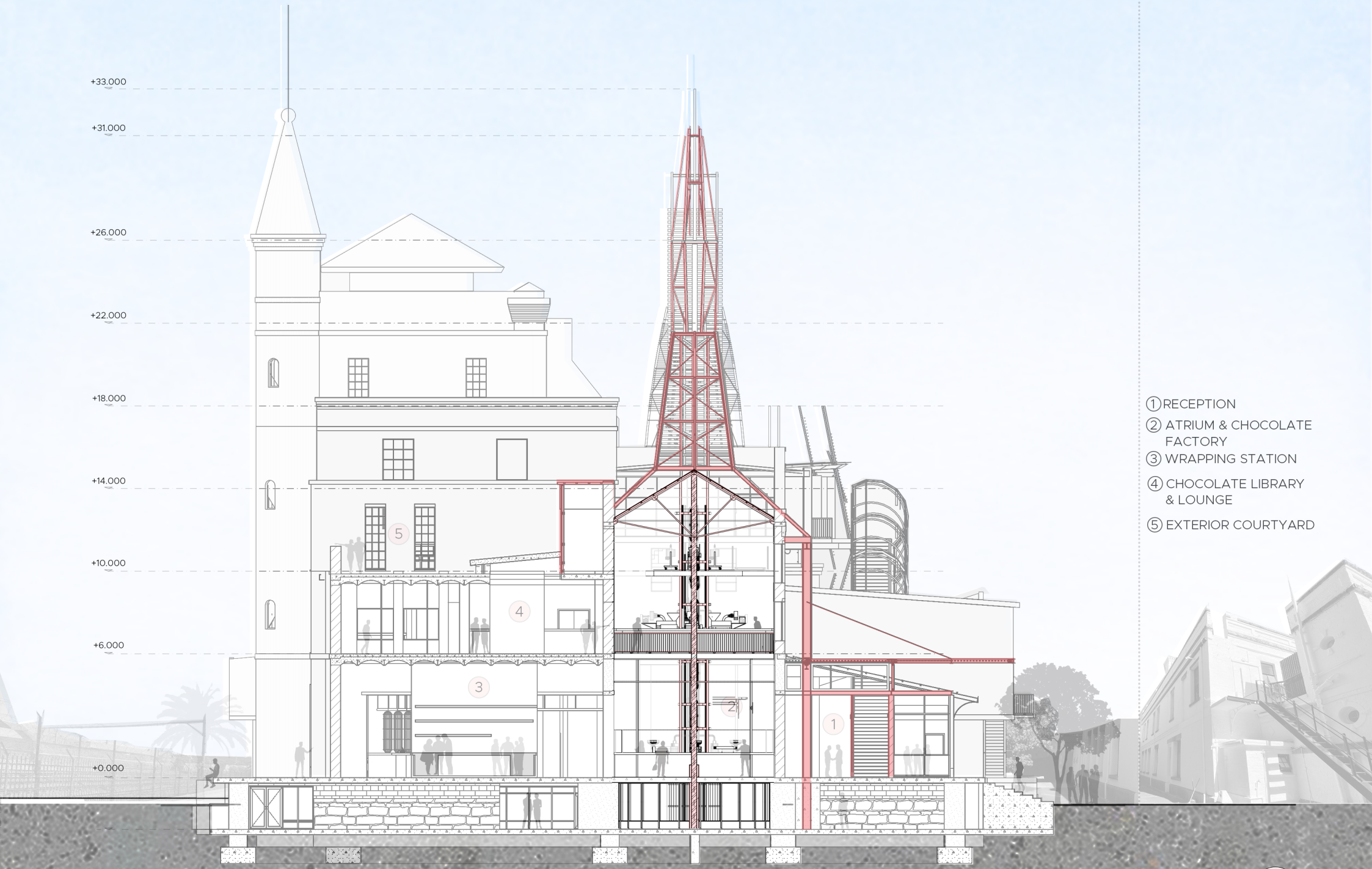


SECOND FLOOR PLAN

EXISTING

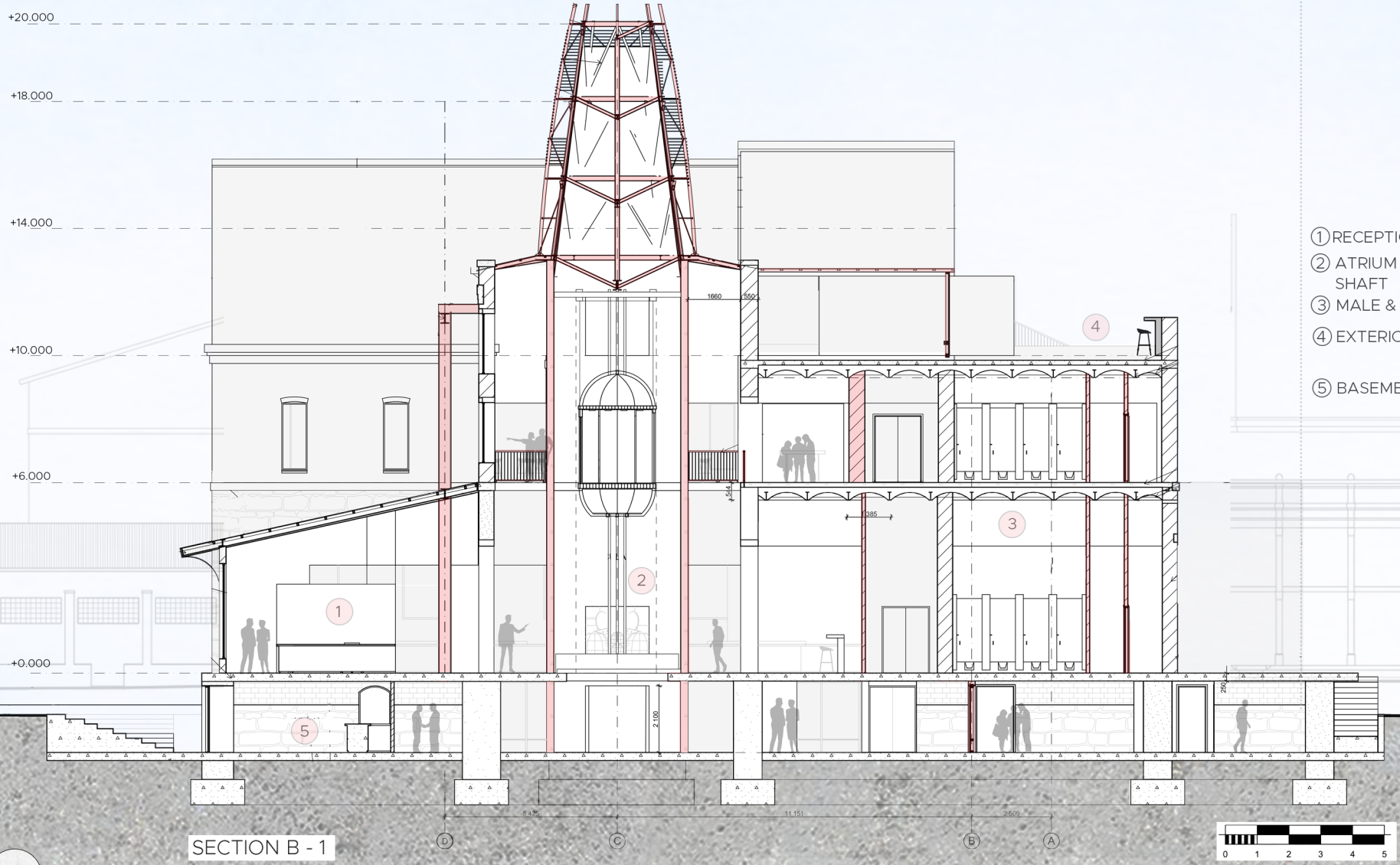
NEW

1 M/F Restrooms
2 Storage
3 Exterior courtyard & viewpoint
4 Fire escape stairs
5 Staff room
6 Laboratory
7 Choc.tasting lounge
8 Choc, tempering & moulding
9 Supplies and sorting
10 Lift
11 Ingredient exhibition
12 Chocolate spa
13 Existing space (to let) with proposed function



SECTION B-2

① RECEPTION
② ATRIUM & CHOCOLATE FACTORY
③ WRAPPING STATION
④ CHOCOLATE LIBRARY & LOUNGE
⑤ EXTERIOR COURTYARD



① RECEPTION
② ATRIUM + CIRCULATION SHAFT
③ MALE & FEMALE WC
④ EXTERIOR COURTYARD
⑤ BASEMENT RECEPTION

SECTION B - 1



1. CHOCOLATE EXHIBITION & EXPERIENCE
2. CHOCOLATE WORKSHOP WAITING LOUNGE
3. CIRCULATION
4. ATRIUM
5. STACKED CHOCOLATE FACTORY
6. EXTERIOR COURTYARD
7. EXISTING SPACE TO LET
8. LOUNGE & VIEWPOINT
9. CHOCOLATE SPA

5 10

SECTION B - 1



NORTH ELEVATION

5 10



SOUTH ELEVATION

5 10



EAST ELEVATION

5 10



WEST ELEVATION

5 10



Fig 223: View of the new tower from the exterior courtyard (Author)



Fig 224: View of the northern facade from Beach Road (Author)



Fig 225: View of the new tower from Lower Church Street (Author)



Fig 226: Perspective view of the northern facade - Old & New additions (Author)



Fig 227: Perspective from the main entrance of the complex, to the main entrance of the building (northern facade) (Author).



Fig 228: Interior perspective of the Chocolate Beverage bar & Lounge (Author).

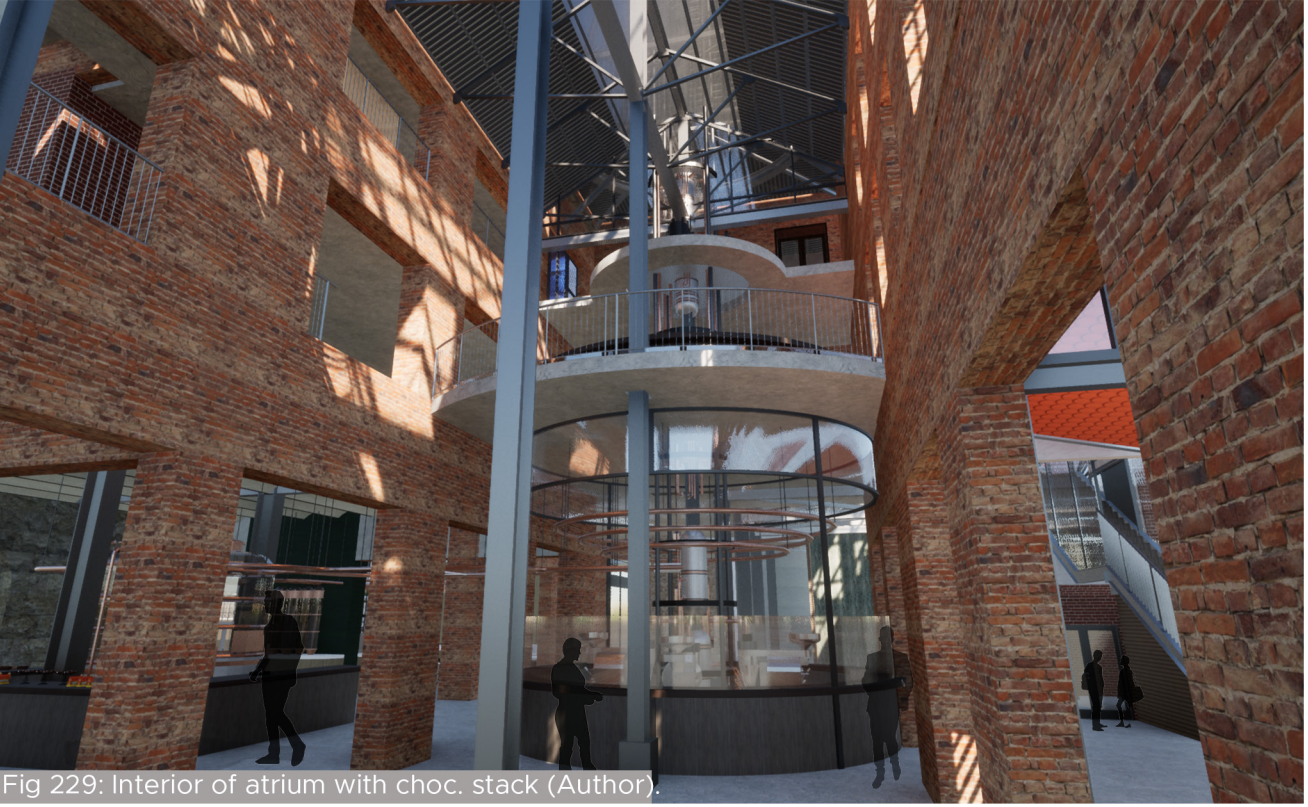


Fig 229: Interior of atrium with choc. stack (Author).



Fig 230: Interior of chocolate spa viewpoint (Author).



Fig 231: View of central tower from exterior courtyard (Author).

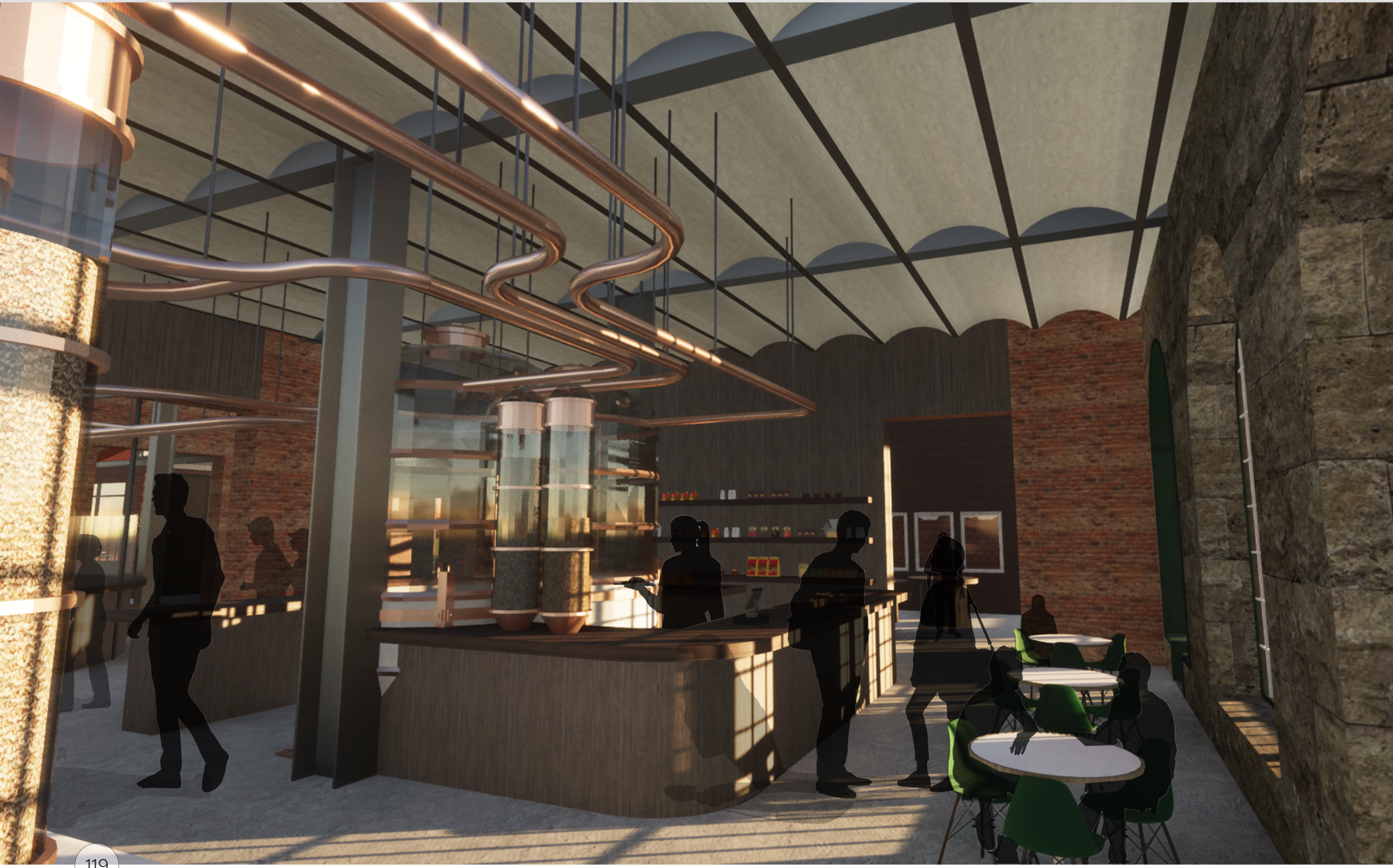


Fig 232: Interior perspective of the Retail store and paypoint adjacent to the Chocolate beverage bar (Author).



Fig 234: Interior perspective of the ground floor level of the stacked chocolate factory - cacao bean roasting (Author).



Fig 235: Close up of louvre system (Author).



Fig 236: Perspective of the northern facade (Author).



Fig 237: Perspective of the northern facade (Author).



Fig 238: Perspective to the west (Author).

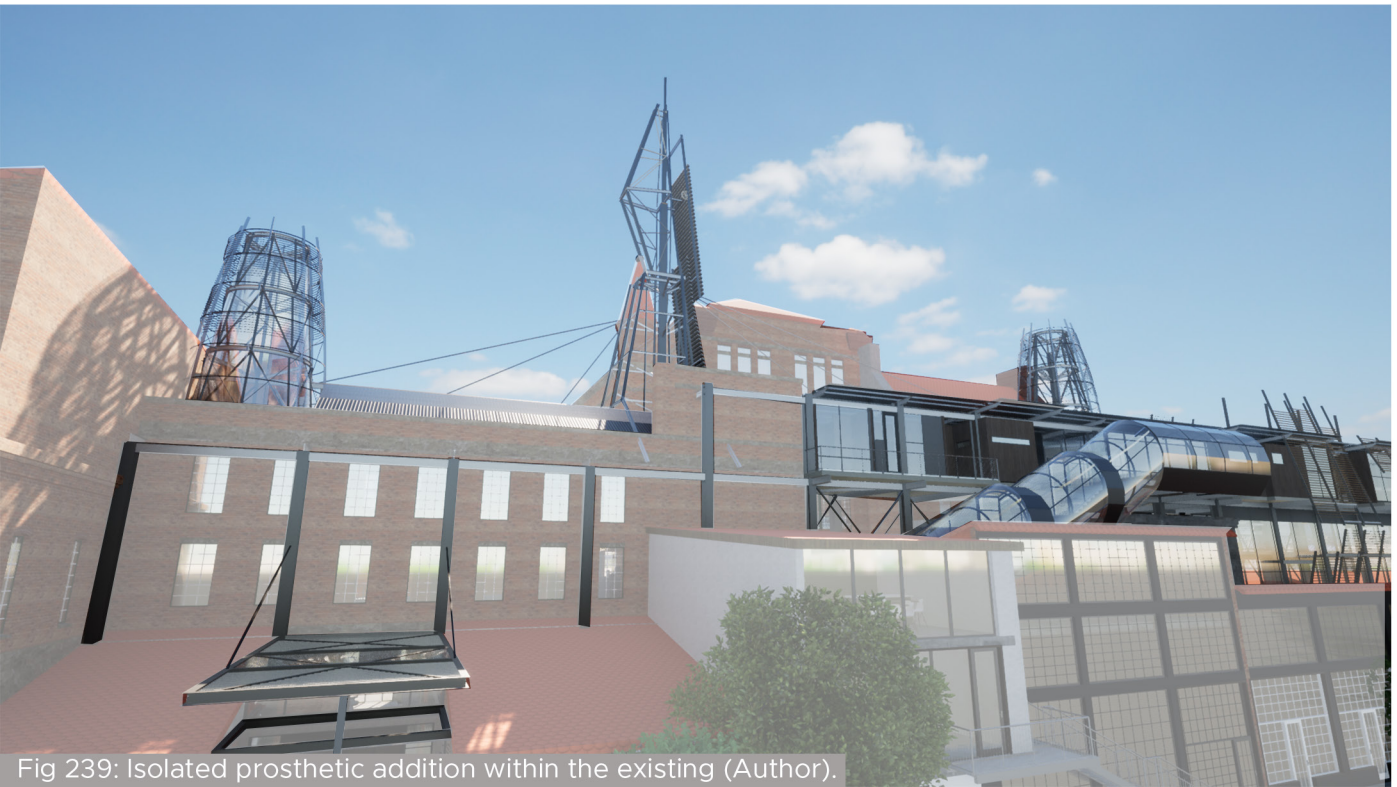


Fig 239: Isolated prosthetic addition within the existing (Author).



Fig 240: perspective of the new main entrance (Author).



Fig 241: Interior perspective of the retail store adjacent to the Chocolate beverage bar (Author).



Fig 242: Interior perspective of the Chocolate beverage bar and adjacent retail point (Author).



Fig 243: Final section model (Author).



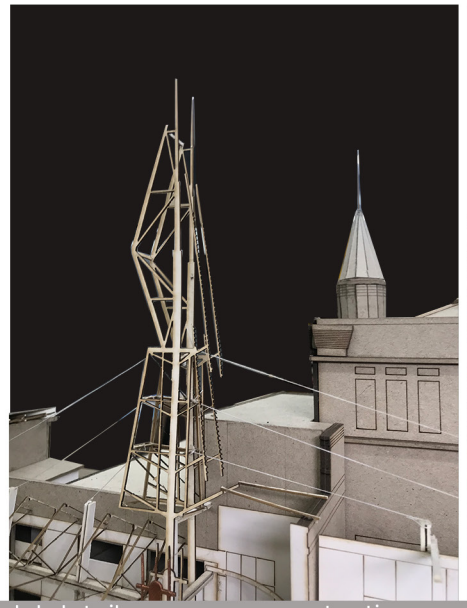






Fig 244-247: Final section model details, copper accentuations, various angles and the existing buildings' Southern facade (right) (Author).



Fig 248: Additional final model illustrating the whole scheme in context (Author).

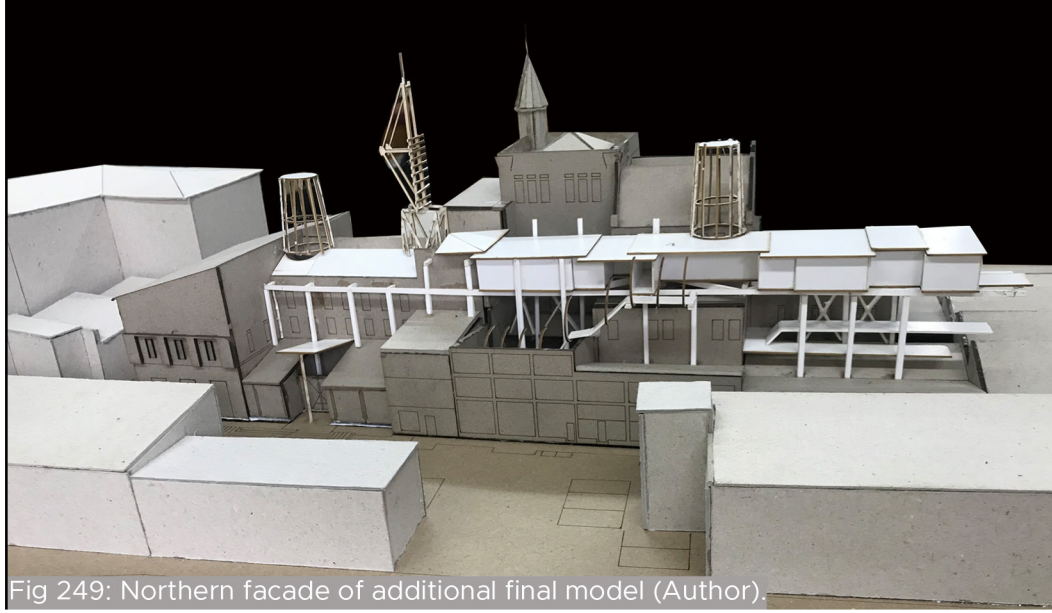


Fig 249: Northern facade of additional final model (Author).

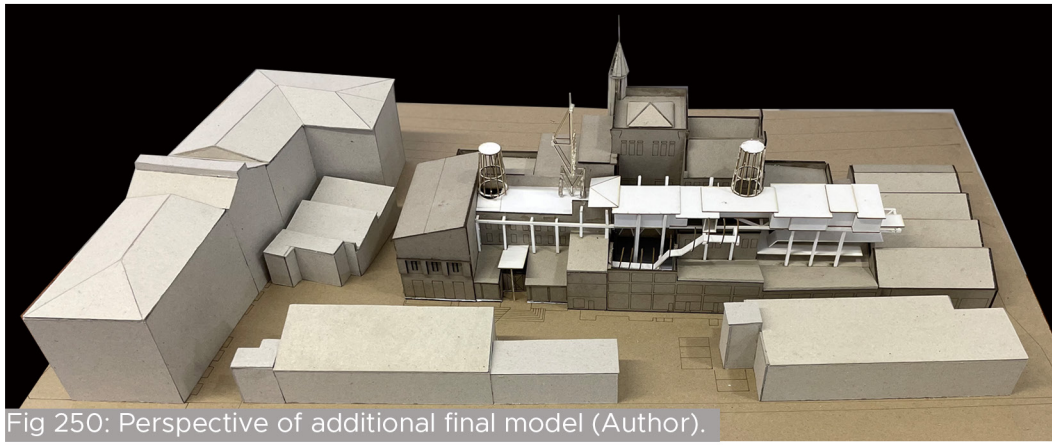


Fig 250: Perspective of additional final model (Author).

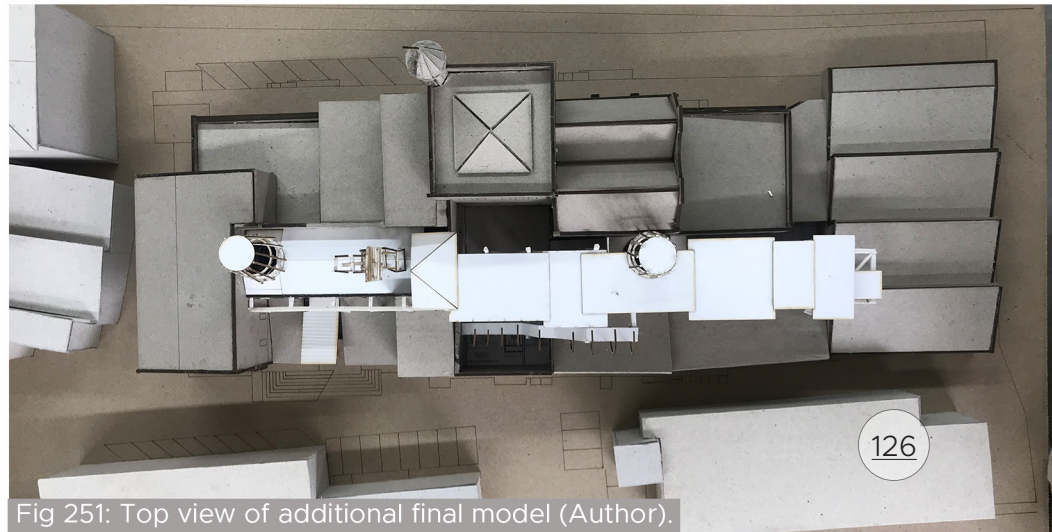


Fig 251: Top view of additional final model (Author).



Fig 252: northern perspective (Author).

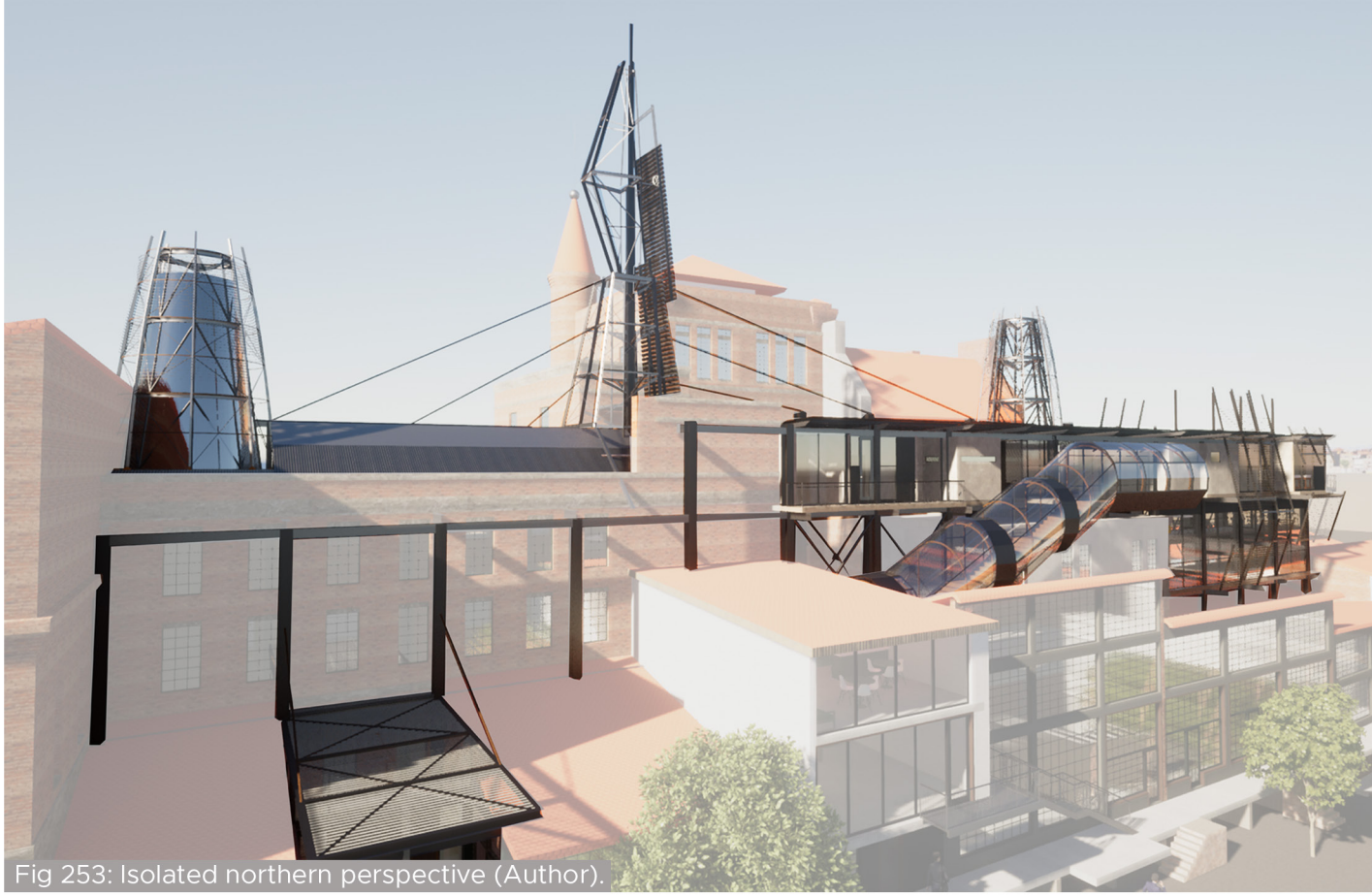


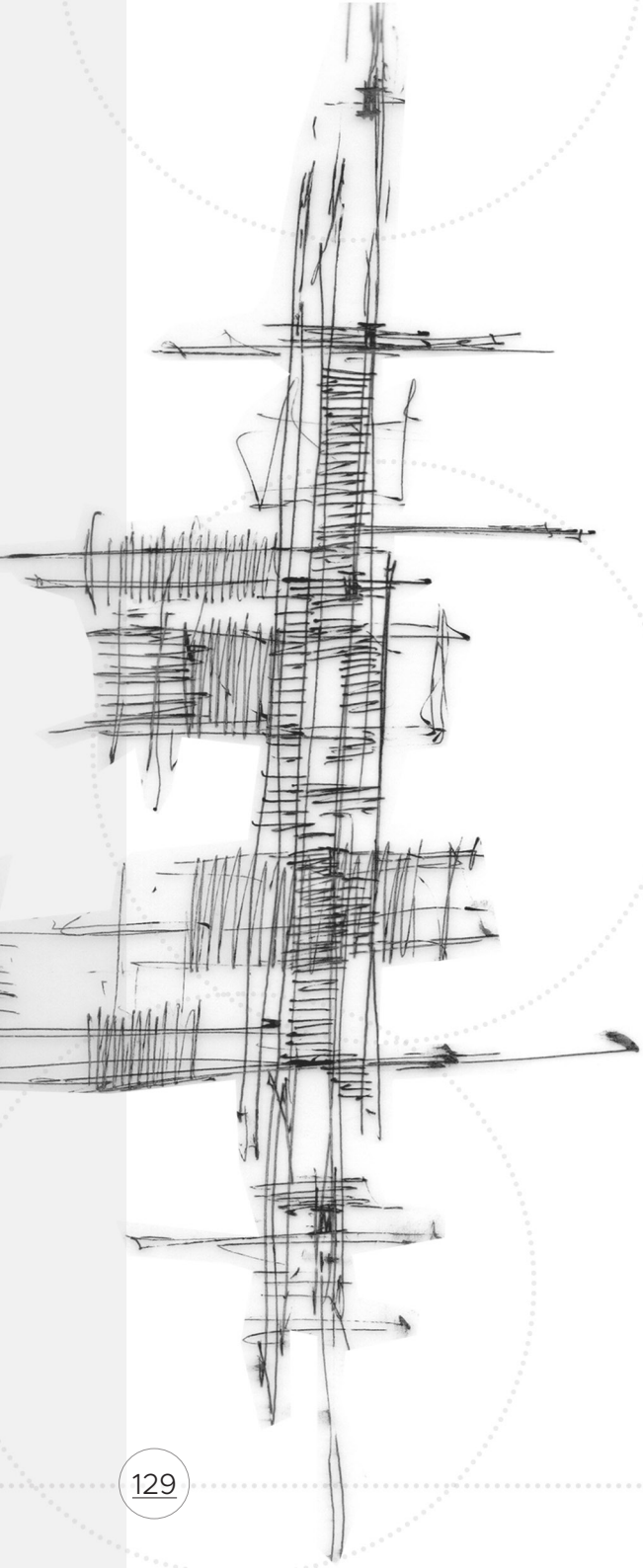
Fig 253: Isolated northern perspective (Author).



Fig 254: Existing exterior courtyard within scheme (Author).

Technical chapter

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7. Precedent analysis

Introduction

Precedent studies form a part of the basis for design development, influencing the approach to existing structures on site, the site itself, and its various components. Analytical studies of the built environment provide valuable insight into the construction, features, program, function, and aesthetics of a building. The method of construction and assemblage differ for each building, as it's dependent on geographical context, climate, use and accessibility. The technical precedent intends to slot into the further developments of a design approach, seeking to inform the application and development of the designs' technical detailing. Furthermore, it aims to inform the design regarding specifically identified components, such as the program, spatial organization, and structural elements.

In the following sections, specific elements of the built project are identified and investigated to create a comprehensive understanding of the building and to identify principles in structure, detailing and spatial configuration that could aid in developing a design scheme. The following section investigates the Innovation Powerhouse in four categories with subsections according to the nature of each section. These categories include structure, materials, site, and services.

The rest of Chapter 7 includes analyzing technical details and aspects of the developed design scheme. The various sections will explicate the three-tower composition, their structure, the spatial configuration of the services, the embedded and additional steel structure and the design of the chocolate factory stack.

Fig 255: rough sketch of design development (Author).

7 | Innovation Powerhouse, 2017-2018

Location: Eindhoven, The Netherlands
Architect: Atelier van Berlo & Janne van Berlo
Project scope: Adaptive reuse | multifunctional
Floor area: 11 000 m2

1. Site
1.1.1 Context

Located in Eindhoven in the Netherlands, this adaptive reuse project transforms the building function to accommodate a multifunctional hub within a former power plant. The building and site were once the Philips power plant, providing the Philips factories with power generated by oil, gas, and coal (Griffiths, 2018: online). The existing building was built in four stages on the site known as Strijp-T between 1953 and 1972. Strijp-T is situated in the heart of the industrial area, Brainport, which significantly contributed to incorporating industrial features within the building (Griffiths, 2018: online).

The building was originally set to be demolished. After operations ceased within the power plant, the local municipality placed the building and a few other counterparts on a list due for demolition (Griffiths, 2018: online). Van Berlo design company recognized the opportunity for repurposing the building after it fell into a state of disrepair. After a few years of convincing the local municipality, Van Berlo was granted approval to reuse the building. The principal architect, Artelier van Berlo ‘gave’ the project to his 24-year-old daughter, Janne van Berlo. The Innovation powerhouse serves as her studio’s debut project (Griffiths, 2018: online). A studio she established in her final year of architectural studies.



Fig 256: Steel grid structure extension to existing historic building, facing south (Griffiths, 2018: online).



Fig 257: Location of the site (Googleearth, 2022: online,adapted by author).

1.1.2 Borders | Site

As previously mentioned, the site is known as Strijp-T. A site located in the industrial area of Eindhoven, where the name originated from the phrase ‘end yards’, referring to the industrial setting of the site (Messina, 2018: online). Strijp-T is one of few other sites that have been repurposed and adaptively reused to preserve a historic landmark and breathe new life into the forsaken sites. Other repurposed sites include Strijp-S, renovated to become a studio and retail space. Natlab was reconfigured to accommodate a cultural centre (Messina, 2018: online). De Witte Dame houses the Design Academy Eindhoven and Victoriapark, which was converted to residential spaces (Messina, 2018: online).

The site forms part of a larger industrial block or complex, sharing a compound with Fontys University of Applied sciences, a packaging company, and a gym, making it a collection of functions within one complex. The Innovation powerhouse site is near the main entrance to the larger complex, offering parking and close access to the building. Without its new additions, the main building can be described as a brute, pure, heavy, and raw industrial complex (Van Berlo, 2022: online). That established a large volumetric massing, mainly consisting of brickwork, concrete, and steel construction.

1.1.3 Climate

Situated in the northern hemisphere, the building predominantly faces towards the south, seeking to filter light into the building from the southern side while being more closed off towards the North. Due to the industrial nature of the building, minimal sunlight penetrates the structure. The architect wanted to allow more light into the building without damaging the historic facades and without removing the visibility of the building’s industrial character (Van Berlo, 2022: online). Therefore, smaller windows were installed to filter light into the offices, penetrating the historic façade to puncture small interventions. The 5-meter-wide high-rise within the complex was altered to become a circulation route through the functioning of the building, ensuring collaboration between companies, people, and ideas no matter where you are within the building (Van Berlo, 2022: online).



Fig 258: slit skylight in cut through space, filtering natural light in (Griffiths, 2018: online).



Fig 259: natural light filtered into workspaces & circulation passage(Messina, 2018: online).

This passageway was primarily closed off and void of sunlight. Therefore, the architect designed a small-slit skylight spanning the length of the building to ensure sunlight is filtered into the core of the building (Van Berlo, 2022: online). The core atrium allows light to be filtered into all spaces conjoined to the main circulation core. The spaces adjoining to the circulation core border to the passageway with glazing to increase the transparency within the building. Further glazing was also added to the 'vertical garden'. Where the steel structure becomes an extension of the 5-meter-wide high-rise that was never completed. The additional glazing becomes the direct extension of the existing structure.

Other measures have also been installed to create a more climate-sustainable building, such as installing solar panels, insulating the existing roofs and walls and ensuring the right glazing is installed. These measures ensured that the building achieved an A+ energy label (Van Berlo, 2022: online).

2. Structure

2.1.1 Program and functions

The complex features a multifunctional hub, consisting of various functions on the larger site extent. Still, the building is also the headquarters for the Van Berlo agency, accommodating several professionals within the building, precisely 14 other occupants. Some other tenants include a car-sharing enterprise and an indoor urban farm that utilizes LEDE lights to grow produce (Priest, 2020 online). Due to the core goal of connection and interaction, the design aims to collaborate in all aspects of the layout. The previously mentioned circulation core stretches through the length of the building, creating a cut-through space (Priest, 2020 online). That acts as an atrium for natural light and ventilation and an interaction core where users can spectate other parts of the building and socialize with other passing members.

Should the building be identified according to functions, it accommodates a research facility and offices (Priest, 2020 online). The gross floor area is 11 000 m2, whereby an estimated 2000 m2 is dedicated to communal and interactive spaces throughout the building. These include a café, breakout spaces for events and exhibitions and a canteen (Priest, 2020 online). The existing floor levels have been used as is, adding new floor levels to the interior. The newly provided floor space aims to be spacious enough to house an estimated 500 desks (Priest, 2020 online).

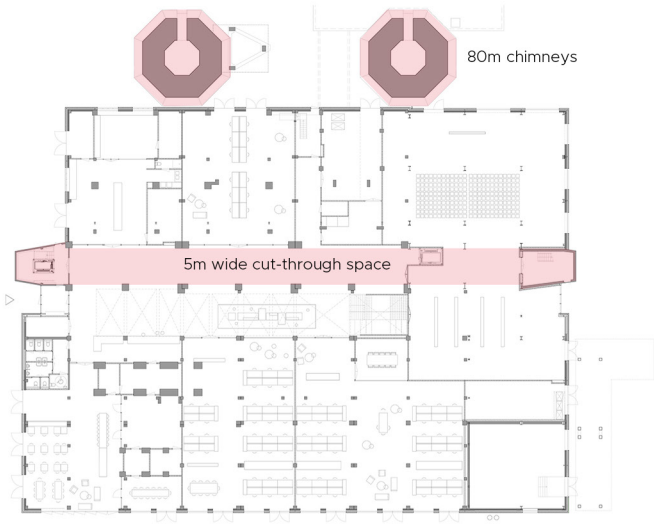
2.1.2 Massing

The building features a main 5-meter-wide and 28-meter in length high-rise component. Adjacent to the high-rise component, the original machine hall brick has been preserved. Three-storey windows have been added to the grid steel structure, that is painted white, and allows more natural light into the building. This decision was reminiscent of the coal chutes' existing fenestration (Priest, 2020 online). To the north, two 80m chimneys, constructed of brick, are left untouched to be restored as it has become a national monument in Eindhoven (Priest, 2020 online). The building, to locals, is known for its yellow brick walls, enormous plinth, and brown or red brick chimneys to the north (Merijn, 2022: online). The existing concrete columns were exposed on the interior to celebrate the industrial-inspired materiality and atmosphere. The concrete is combined with a selection of oak panelling and white wall bannisters to soften the brutal and raw tone of the concrete, aiming to create a more luxurious and decadent atmosphere (Priest, 2020 online).

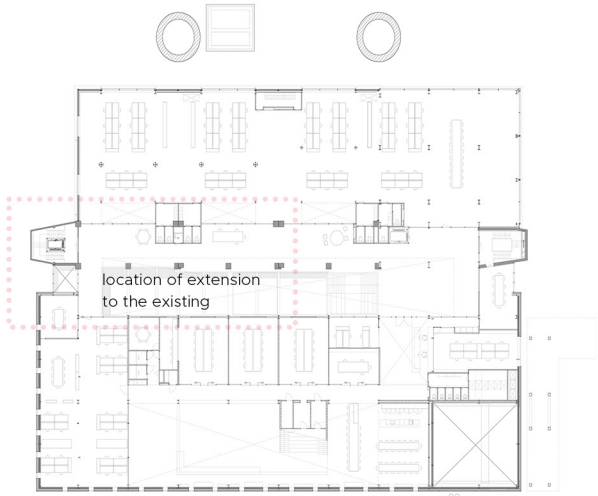
The high-rise component was never completed, as the need for more coal chutes was eliminated. Therefore, the power station was extended laterally with a predominantly grey grid steel structure. This steel structure aims to complete the missing symmetry on the building facades and as stated by the architects, on the drawing plans (Priest, 2020 online). This steel structure becomes the vertical garden that provides external meeting rooms, social space, circulation, and an emergency fire stair (Priest, 2020 online).

2.1.3 Structural typologies

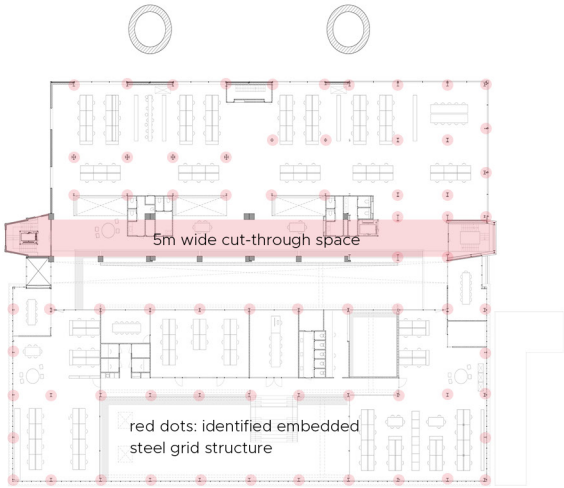
As the previous section explains, the existing structure consists of heavy concrete massing with industrial characteristics and steel grid structures. The grey steel grid structure becomes an extension of the existing brick mass building. An interior embedded steel grid structure can be observed throughout the building where



Ground floor plan

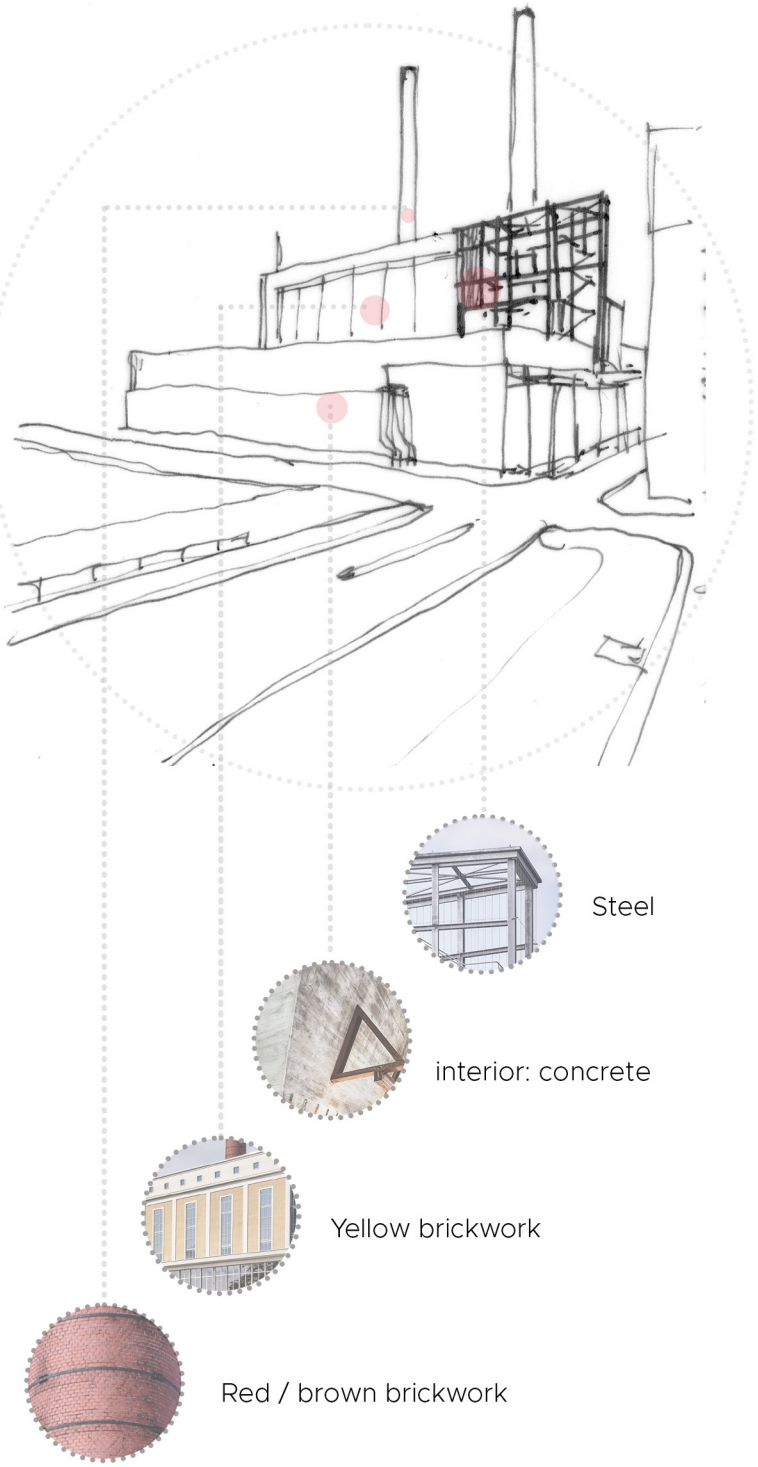


First floor plan



Second floor plan

Fig 260-262: Floorplans adapted to illustrate specific parts of massing (Griffiths, 2018: online, adapted by author).



some components are accentuated and given new use, such as railings for top floor levels or even just decorative elements adorning the concrete. The monumental chimneys to the north of the building consist of a brown and red brick massing.

3. Materiality

3.1.1 Finishes - Exterior & Interior

The building's extension to the northeast corner consists of a steel grid structure contrasting the strict and heavy brick and concrete volumes (Merijn, 2022: online). The steel grid contrasts the industrial construction in conjunction with the glass facades and interior glazing. Even though, in essence, it's a contradiction of the existing, historical, and industrial construction, it aligns smoothly with the existing brick massing (Merijn, 2022: online). Elements of the existing industrial characteristics are celebrated. Concrete columns and the embedded steel structure is left exposed to be appreciated throughout the building. Contemporary additions are considerably added to the existing structure not to replace existing features but to join its function while accentuating the industrial characteristics.

As previously mentioned, in some instances, the concrete massing is adorned with white wall 'museum-like' bannisters and oak panelling (Priest, 2020 online). The additions of 'other' materials offer a break to the overwhelming concrete and steel massing, creating a softer tone (Priest, 2020 online).

The front elevation of the main building is clad and over-insulated, with the addition of slit windows to retain a sense of a solid façade (Priest, 2020 online). The structure to the north, at the back of the main building, also sports a new steel roof structure. This roof aims to improve the thermal performance of the structure yet intends to retain its industrial characteristics (Priest, 2020 online).

Fig 263: Illustration showcasing the variety in materiality (Author).

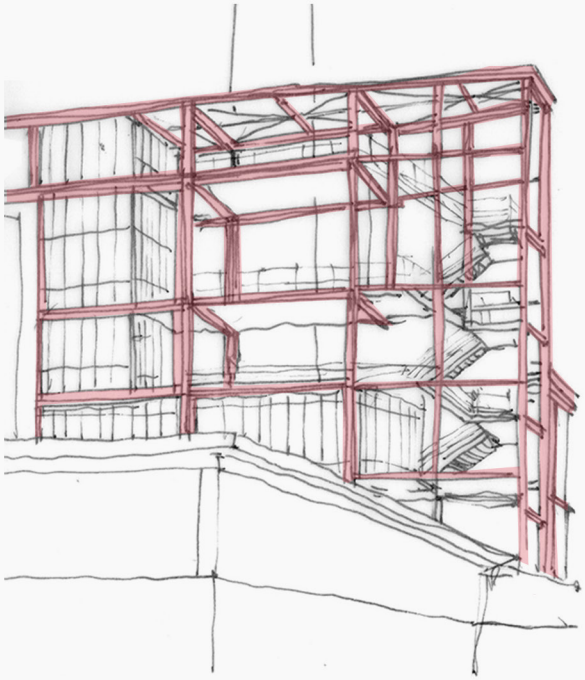


Fig 264: highlighted exterior skeletal envelope (Author).

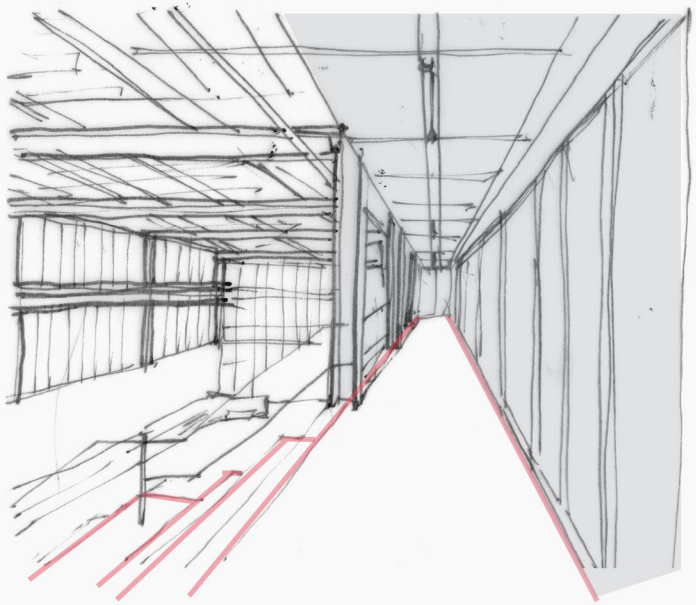


Fig 265 : highlighted circulation routes (Author).

3.1.2 Envelope

The building envelope features a layered structural expression. Layered construction refers to construction that produces and expresses architecture by cladding over structural material, as explained by Peter Wiederspahn in *Structure and Ambiguity*. However, in this case, the structural elements of the building become the cladding, becoming a combination of monolithic and layered construction. The reason for arguing that it leans more towards a layered structure entails the various components and composition of materials. From the exterior, one can observe the brick massing, forming the envelope of the building. Concrete and steel can be observed in the interior as the structure's main elements and the building's aesthetic. Both are the structural elements of the building; however, from the interior, one cannot observe the brick façade, and from the exterior, one cannot observe the concrete and embedded steel structure. Therefore, it becomes a layered construction type due to the nature of its architectural expression and structural and material composition.

4. Services

4.1.1 Circulation

The building prominently features an external staircase, offering access to the various levels of the building massing. On the interior, the building showcases a variety of circulation options. Including an elevator with access to all floor levels and spaces for user accessibility, multifunctional stairs, and 'regular' stairs. Two elevators are placed within the spatial organization, one towards the middle of the composition, to offer a more accessible entree point to most functions. The other elevator is situated within the additional steel grid structure, simultaneously offering external and internal space access. The multifunctional staircase features an oak-panelled hybrid stair. This stair provides circulation between levels, social space, and space that can be utilized for events, lectures, and exhibitions.

Circulation passageways form the connecting link between various functions. The cut-through passageway serves as the main circulation route, with break-out spaces that branch out to the northern and southern sides.

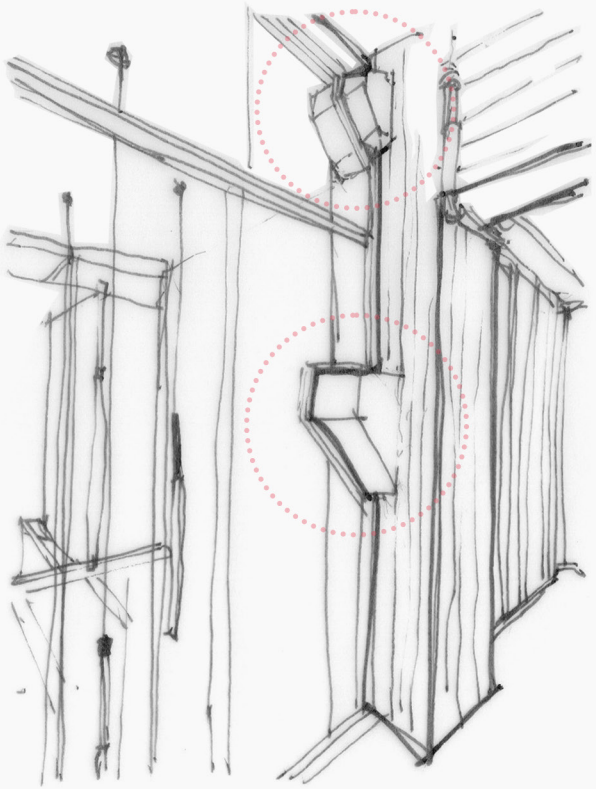


Fig 266 : highlighted celebration of industrial elements + new (Author)

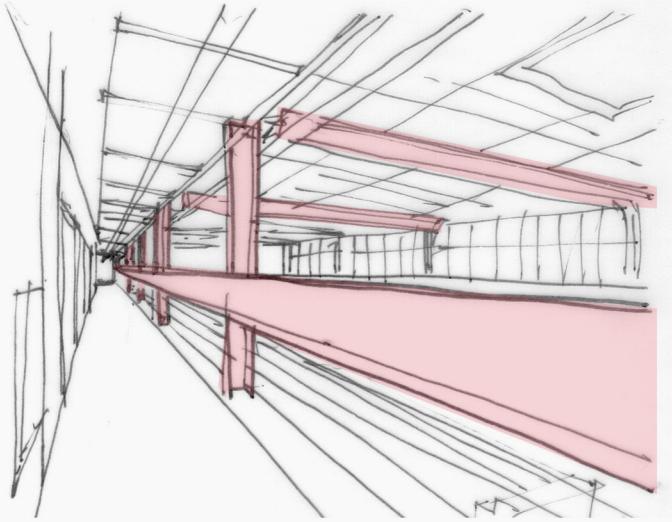


Fig 267: highlighted embedded steel structure (Author)

4.1.2 Lighting & Light

The existing building, while serving as a power station, was not dependent on natural sunlight and did not make enough provisions to allow sufficient natural light into the building. Therefore, the architects made a few adjustments. Skylights, glazed facades, glazed interior partitions and punctured facades were the main methods utilized to allow more sunlight into the building.

The glazed facades are also sufficiently insulated and cladded to prevent overheating. The interior glazed partitions also allow sunlight into most of the building. The skylight stretches the length of the building, guiding light into the central atrium or circulation core (main passageway). From there, the light is reflected into the various levels of the building's interior. Additional punctures in the historic façade to fit slit windows also aid in guiding more natural light into the building. These punctures were carefully considered, not damaging the historic façade, and compromising its integrity.

Artificial lighting is added as LED light fixtures, suspended from the high ceilings, or fixed to the concrete members.

7.2 Lessons learned

This precedent resonated with a number of aspects connected to the design and theoretical intent, including the type of project and the approach to the existing buildings on site. The proposed adaptive reuse approach greatly benefitted from analyzing other approaches to reuse and preservation that compliments the existing through extension and the celebration of already existing elements and characteristics. The Old Castle Brewery currently accommodates a variety of functions, similar to the Innovation Powerhouse. However, these functions have limited access to each other. By investigating how the precedent deals with the isolation of functions and the reintegration thereof, it provided insight into the reintegration of functions within the existing building on the site of the Old Castle Brewery.

Furthermore, inspiration can be found in the collaborative initiative aimed at the Innovation Powerhouse. As it creates a multi-dimensional hub for a variety of



Fig 268: Materiality, concrete coal chute with steel fixtures (Griffiths, 2018: online).

functions to co-exist, communicate, and interact with each other. The precedent also provided insight into exploring the possibilities for joining or additional structures that become an extension of the existing historic buildings—illustrating how an additional steel structure to a building can become a natural extension of the existing.

This precedent provides further inspiration for utilizing steel grid structures and identifying elements from the precedent to celebrate the existing embedded steel structure and showcase it within the interior of the existing building.

The precedent illustrates how to offer breaks in overpowering applications of a single material. Yet, still celebrating the atmosphere the predominant material creates within the interior or on the exterior façades.

Conclusion

The Innovation Powerhouse is a multi-dimensional built example to consider when in the early stages of design development. It can provide insight specifically for adaptive reuse projects and the preservation it can offer while adding contemporary extensions to the existing structures on site. It further provides more than one aspect to consider, undertaking a variety of application methods in terms of structure, materials, and function.

By analyzing this precedent, one becomes aware of the possibilities in design, yet remains cautious for direct application. The methods utilized for this example are site, climate, and context-specific. Precedent studies are an essential aspect of design development. It can support certain aspects to design, construction, and the application thereof, or it can offer the opportunity to consider other options and methods of application and design development.









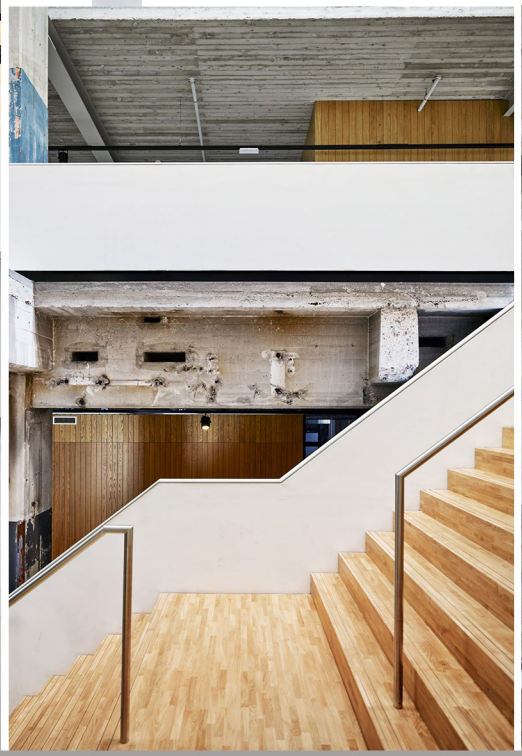




Fig 269-274; images showcasing the interior and exterior structure, materiality, circulation and communal spaces (Griffiths, 2018: online) + (Messina, 2018: online) + (Van Berlo, 2022: online).

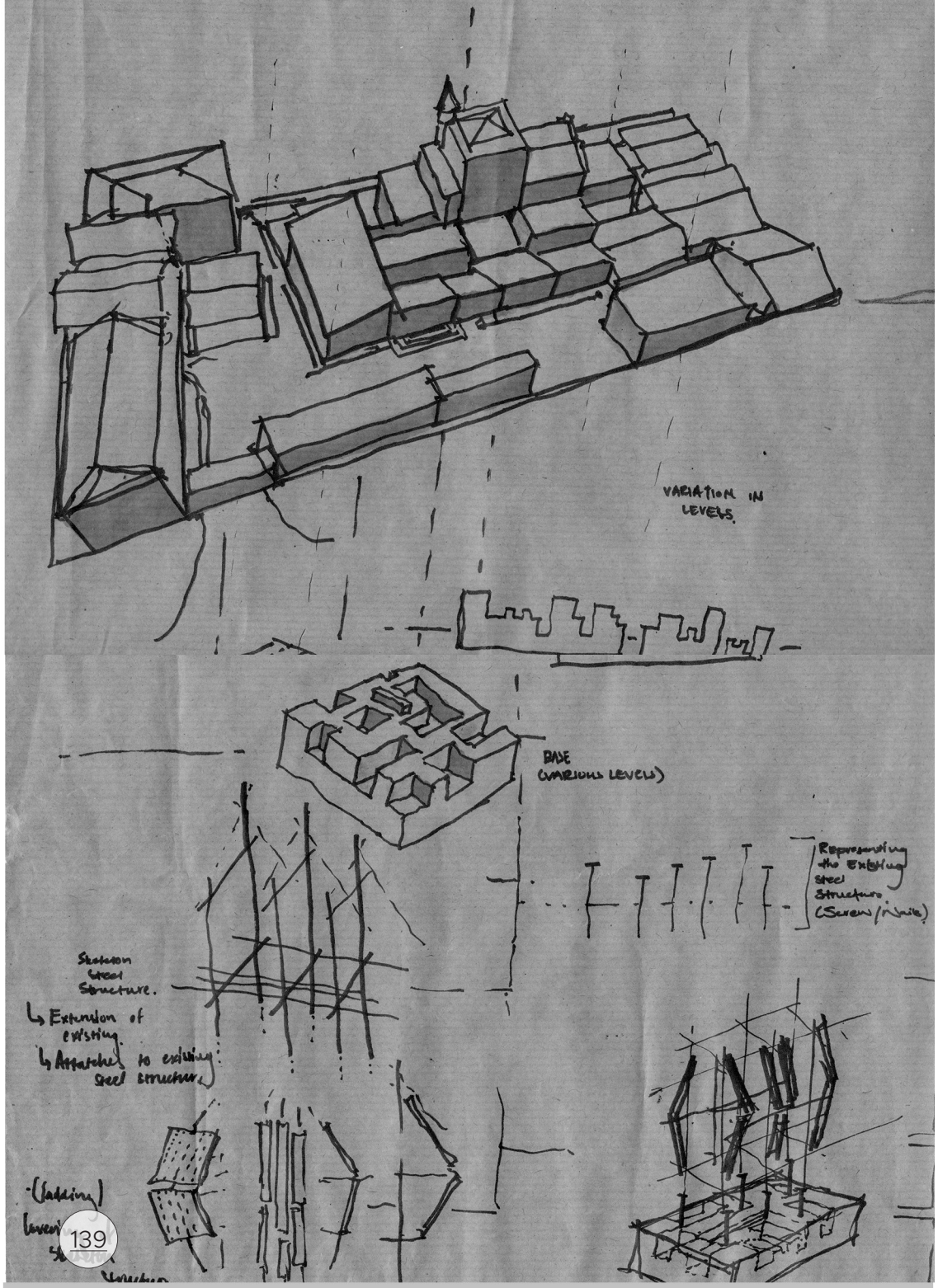


Fig 275: Structural touchstone process and development (Author).

7.3 Structural touchstone

As part of the conceptual phase, developing a structural touchstone was essential to establish an idea of what the building could resemble. The touchstone was developed after the three concepts and displayed a lot of influence from them. The process of establishing a structural touchstone begins with an investigation. One must understand the site and building structurally to propose a structure to be attached to the existing. Therefore, through the site analysis and study of photographs, it was possible to establish the fundamentals of the structure. The existing building consists of a large red brick massing, with stone string courses and a Table Mountain stone base. Furthermore, the building consists of an internal embedded cast iron steel structure that supports a concrete and steel roof and flooring system. These aspects of the structure made up the base for further development and investigation.

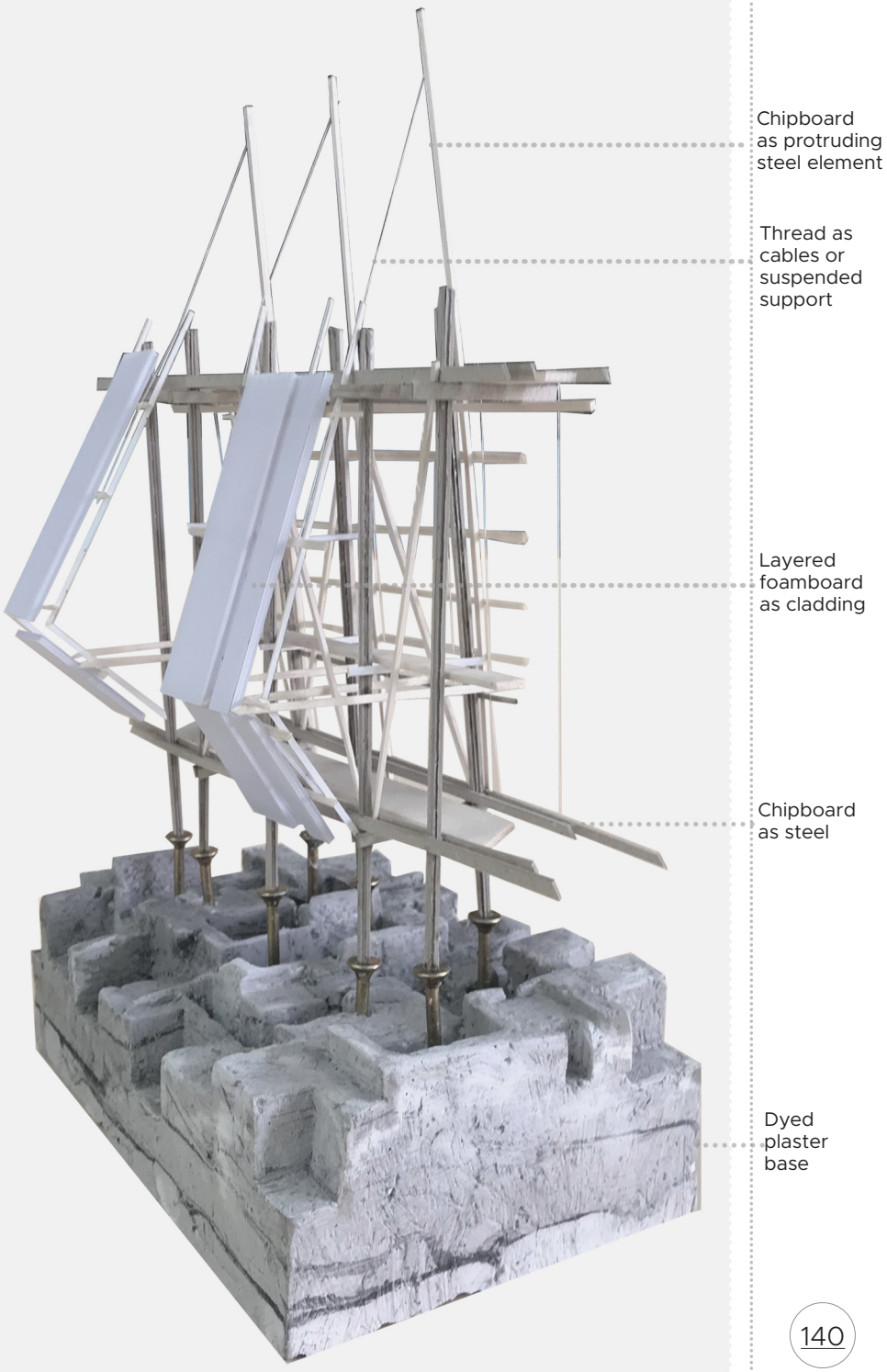
The structural touchstone aims to provide a possibility in construction and structural potential. It explores a possible solution per the parameters from initial conceptual explorations and the concepts. In the concepts, various relationships between prosthetics and their host were examined. However, the *Parasthetic* and the *Mutuasthetic* concept stood out. Therefore, this structural touchstone was based on the findings and explorations of the beforementioned concepts. The touchstone showcases the first attempt at establishing materiality and structure for a possible prosthetic addition.

The structural touchstone is constructed of a few materials: balsa wood representing timber, layered foamboard representing cladding elements, chipboard representing steel, screws representing existing steel elements and a dyed plaster base. The touchstone is based on the attachment between the existing steel structure and an additional steel structure. The base of the touchstone, made of dyed plaster, was cast to resemble the multi-levelled existing building complex.



The Old Castle Brewery consists of multiple structures that vary in height, which creates a stepping composition on the exterior. The base was cast to resemble its stepping nature, varying in height. The screws were placed into the mould of the base to represent the embedded steel structure within the multi-levelled and stepped composition. The screws offer a point of attachment for any additional structures. The chipboard, layered foamboard and balsa wood create a triangular composition for a possible prosthetic addition derived from the concepts and initial conceptual sketch explorations. The exploration contains a high-volume atrium with vertical steel elements attaching to the embedded steel structure, protruding upwards. Various balsa wood and chipboard elements represent the steel structure as a column and beam system with bracing and additional support. The protruding triangular shapes are supported by cladding or louvre elements that protect the created atrium space. Additional thread was tied to the protruding chipboard and the triangular shape to suggest incorporating suspension elements or additional support with cables. The touchstone encompasses a range of possibilities as the first response on the concepts, site, and existing features. It aided in the further establishment and development of structural systems. It inspired the use of layered compositions and structural systems, with a steel structure attached to the embedded steel structure and the use of various materials. In the following sections, the structural systems of the design will be explicated.

Fig 276 & 277: Left: close up photograph of the plaster base. Right: The structural touchstone.



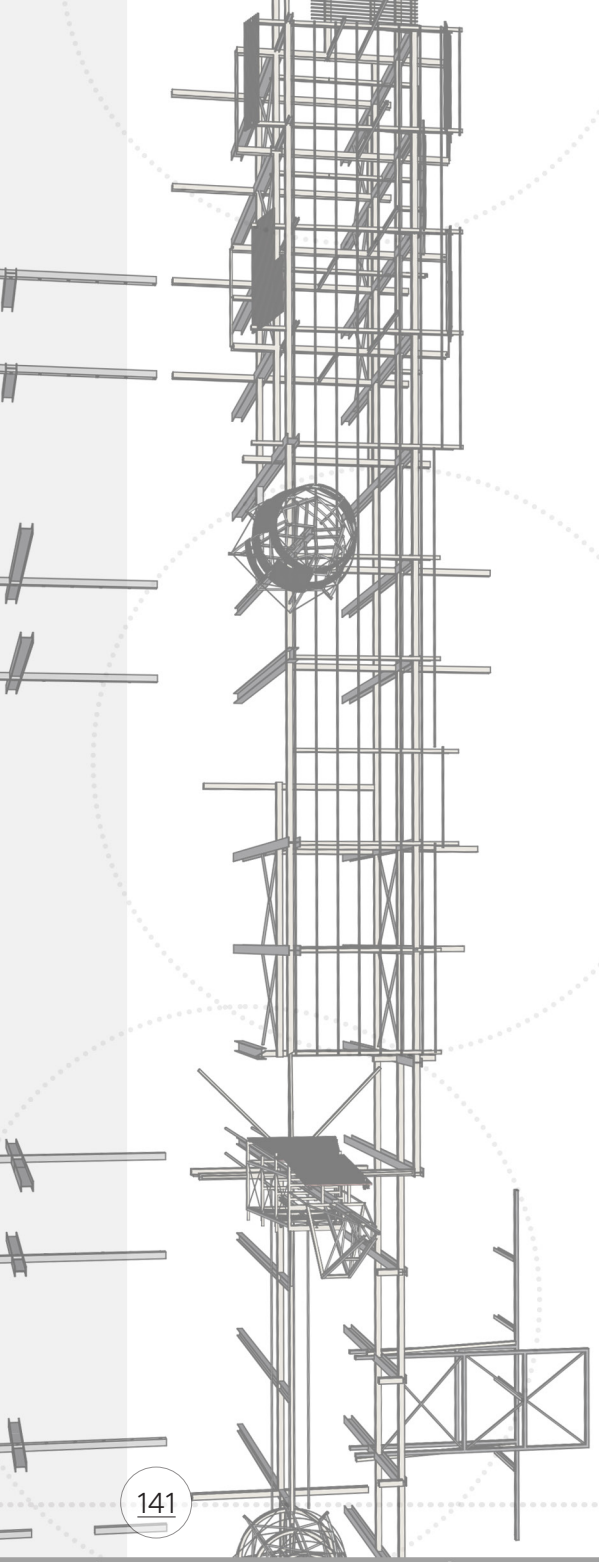


Fig 278: Isolated steel structure from above (Author).

7.4 Technical Resolution:

Although the allure of indulgence and fantasy govern most investigations, analyses, and the application of identified principles to this design scheme, reality remains. A reality that encompasses the requirements, restrictions and allowances when altering a historic building in Woodstock. As well as the functional and structural requirements that make up the composition of this scheme. As illustrated in the previous chapter, the design consists of a three-tower composition along a spine-like datum structure that becomes a prosthetic addition to the Old Castle Brewery, establishing place as it extends the existing building fabric. The design intervention aims to radically change the urban environment by contrasting a new addition to the historical, albeit letting the addition stand submissive to the existing. The embedded steel structure is newly accentuated and extended beyond the walls of the historic building, contrasting the massive volume of English bond red brick.

On the interior, various changes are made by removing, adding, or extending existing features while introducing new identities and functions to the existing. The stacked chocolate production core becomes the foci of an atrium overlapped by various other functions and allows visitors to spectate the chocolate-making process across multiple vertical levels. In this section, the attributes mentioned above will be further explicated and analysed. Therefore, this chapter sets out the stacked chocolate production core composition, the three-tower configuration and structure, the existing buildings' structural features, the organization of services and functions, and the explication of the existing and additional steel grid structure.

7.4.1 Chocolate production core

The vertically stacked chocolate factory consists of five distinct levels. Each level houses a part of the chocolate production process, as illustrated in chapter 1. The five levels can be identified according to their function and location within the building's composition. The chocolate manufacturing process is initiated on the basement level. Apart from the main chocolate production core, the basement level accommodates the services required before chocolate-*poiesis* can commence. These functions or services include receiving small deliveries such as the accompanying ingredients to cacao, large deliveries from the railway such as the packaged cacao beans from Kokoa Kamili, and the storage and washing of the cacao beans to be later used for chocolate production. The first distinct level of the stacked chocolate production core is the housing for clean cacao beans on the basement level, which supplies water and cleaned cacao beans into the production core by a pipe and pump system. This level consists of four tanks centred within the core that stretches to higher levels. The second

distinct level accommodates cacao bean roasters and storage tanks to house the beans that have already been roasted. On this level, cacao beans undergo a roasting period to develop their chocolate aroma and character. A roasting process that may last up to two hours allows the moisture content of the beans to reduce and change to a rich brown colour.

The third distinct level accommodates cracking and winnowing machines. On this level, roasted beans are fed into a machine that cracks the outer shell or husk of the cacao bean, allowing the roasted cacao nib to be separated from debris and its shell. From there, the nib and husk mixture proceeds to the winnower, where air is forced through the mix to separate the lighter husks from the heavier nibs. The separated husks, excess pulp and shells are collected and stored in a container routinely collected by the chocolate spa staff. These products are then ground up to be used in chocolate therapy. The cacao nibs are stored in an additional container that dispenses the nibs to the next level. The fourth distinct level contains melangeurs, a machine that grinds the cacao nibs into a chocolate paste while adding other ingredients, such as flavouring and sugar, to create a smoother chocolate liquid that can be worked with. The third and fourth levels have granite slabs on which the liquid chocolate can be tempered. The third level is on the first floor of the building, accommodating chocolate workshops for the public, to which liquid chocolate is dispensed from the fourth production level. Once the chocolate paste is ground down, the chocolate liquid is tempered on these granite slabs to cool down to a specific temperature fit for moulding. The liquid chocolate is then poured into moulds, stored in a cool storage room to set, and later packaged.

The chocolate production core accommodates pipes, containers, tanks, and pumps at various intervals to dispense and provide the ingredients to above or below production levels. Within this core, waste or by-products created in the chocolate manufacturing process, such as wastewater, pulp, and unusable cocoa butter, is transported via pipes and pump systems to the basement level. The chocolate production core becomes the foci of the interior, situated underneath the largest of the three towers, which emphasizes the production core on the exterior

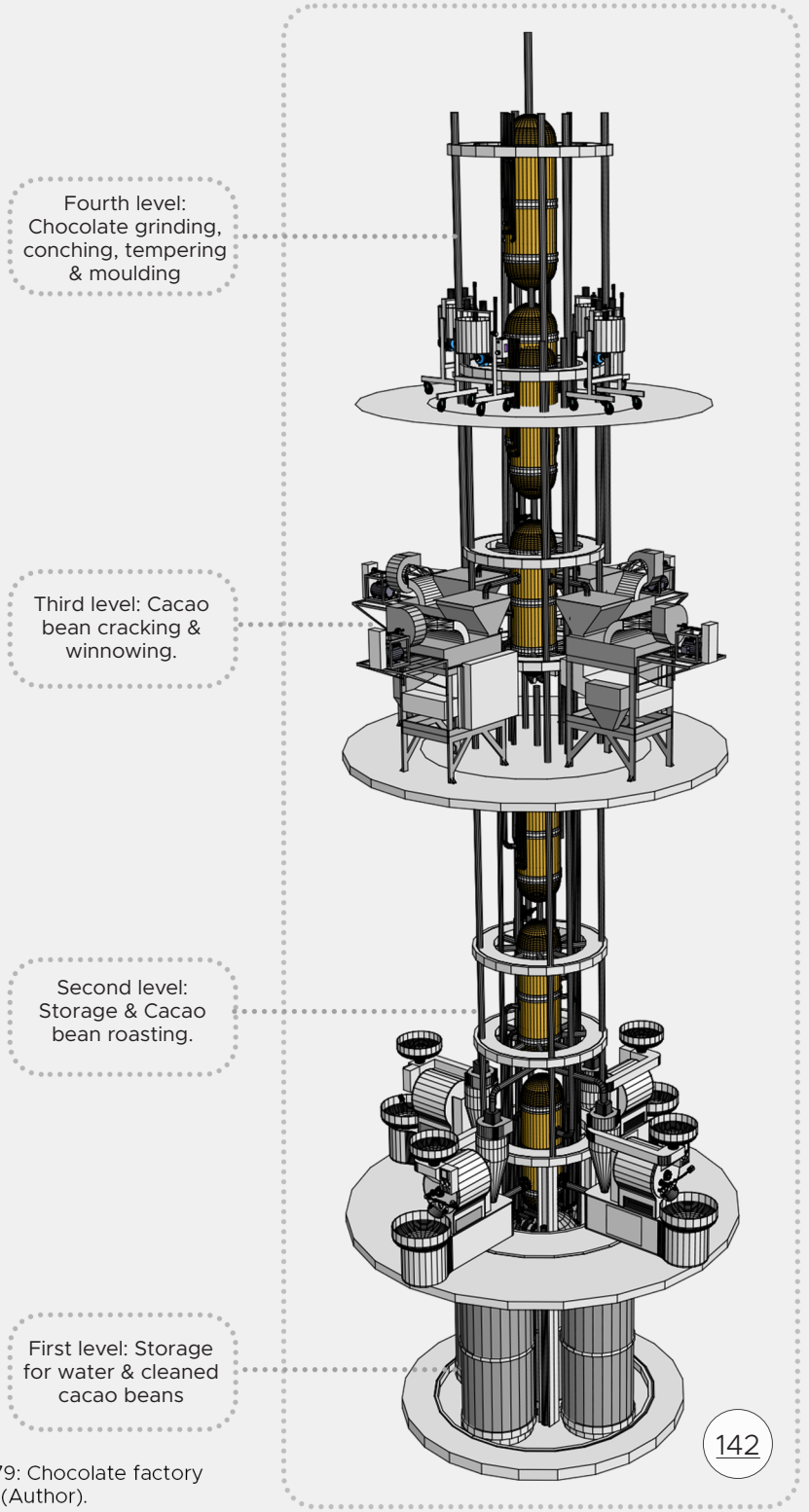


Fig 279: Chocolate factory stack (Author).



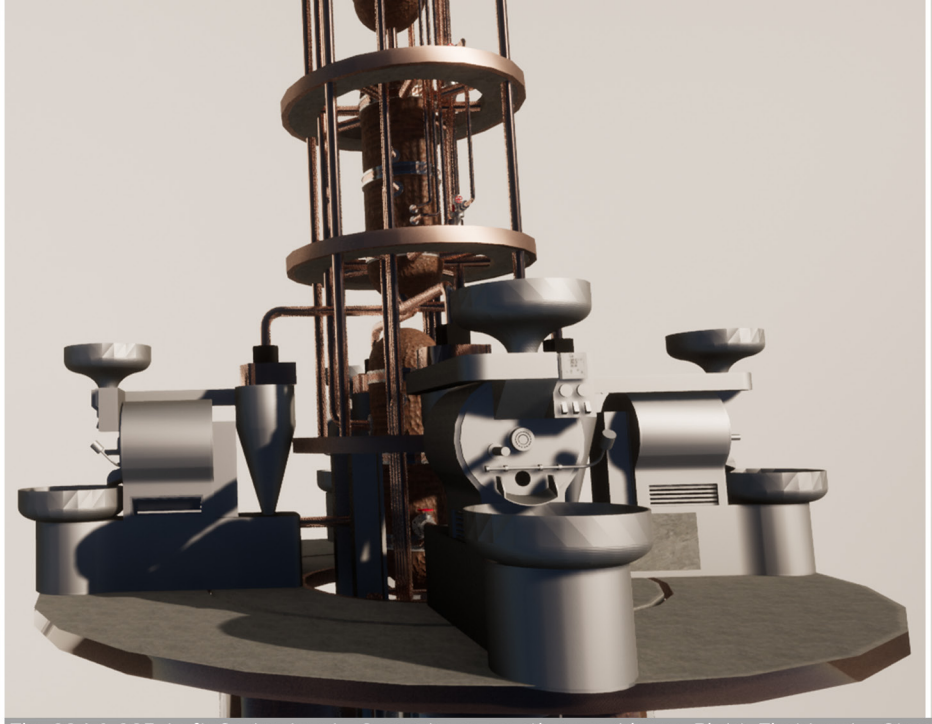
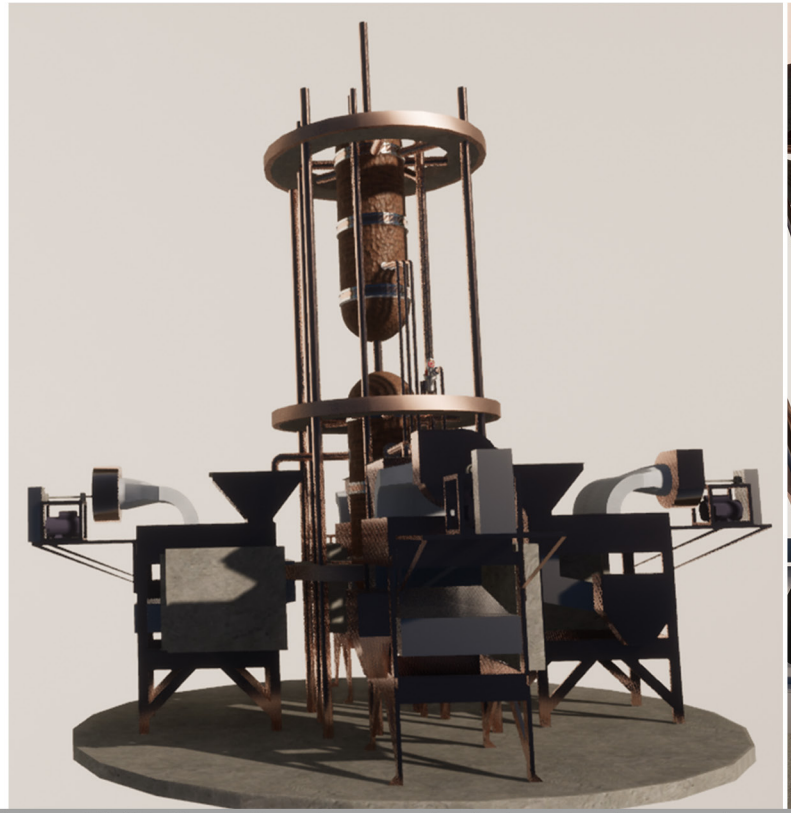




Fig: 284 & 285: Left: Sedon level - Cacao bean roasting machinery, Right: First level - Storage for water and cleaned cacao beans (Author).



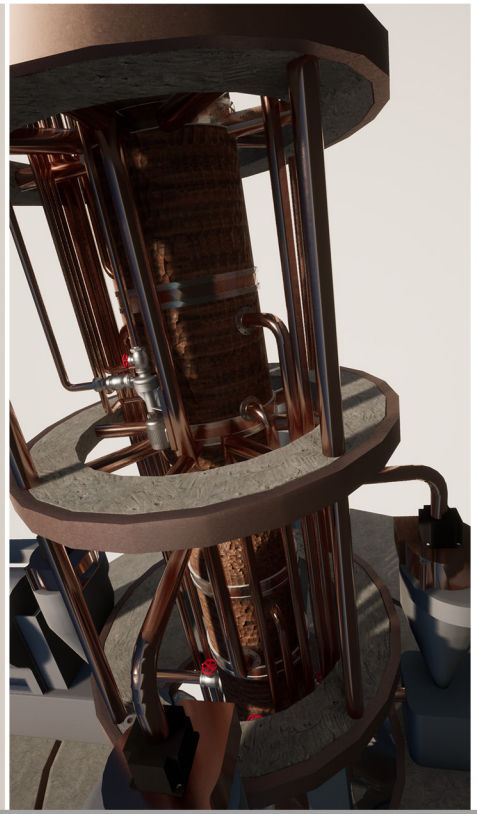




Fig: 280-283: Left to right: Chocolate production stack levels 1-3, Third level - Cacao bean cracking & winnowing, Close up of core pipe systems, Closer perspective of the materiality of the storage tanks (Author).

7.4.2 Three-tower composition:

As previously mentioned, the three towers are aligned on a steel structure datum that stretches along the existing building. Two smaller towers on opposite sides of the largest tower have the same construction method and composition. This composition consists of a layered material approach, mainly of lightweight steel components. The components of these towers can be divided into a primary and a secondary structure. The primary structure refers to the innermost steel component consisting of angled steel profiles to act as the primary inner support for the rest of the tower composition. The innermost part consists of 100 x 75mm I sections at a 60˚ angle fixed to 100 x 75mm I section vertical supports in 2500mm increments and 100 x 75mm I sections at a 25˚ angle set to 100 x 75mm I sections vertical support in 2500mm increments. The secondary structure attaches to the primary structure and functions as the support for the outer louvre skin. The secondary structure consists of 25 mm diameter galvanised steel tension cables fixed within the secondary structure to various 100 x 75mm steel I sections. The remaining component is the outer louvre skin, consisting of 20 x 15mm aluminium louvres fixed to 100 x 75mm steel I sections at 80mm c/c.

The large tower's base consists of a similar layered steel structure as the two smaller towers, resembling similar support that emerges from the steel grid structure embedded and extended from the existing building. This tower's base consists of 100 x 75mm I sections at a 30˚ angle fixed to 100 x 75mm I section vertical supports in 2500mm increments.

With 20 mm diameter steel rod cross bracing for the 150 x 100mm steel I section frame and additional 20 mm diameter tension cables for additional support to the lightweight steel truss roof over the main atrium space and the extended prosthetic addition towards the west of the tower. The specifications mentioned above form part of the primary structure of the large tower, while the secondary structure extends further upwards. The secondary structure aims to resemble the existing brick tower as a deconstructed remembrance of its shape. Constructed of light steel profiles, the secondary structure becomes the top of the additional beacon to the Old Castle Brewery. The secondary structure consists of 150 x 100mm steel I sections and 50 x 75mm galvanised lightweight steel C profiles.

Furthermore, the large tower also has an outer louvre skin. This skin is to the tower's western side, limiting light into the chocolate production core.

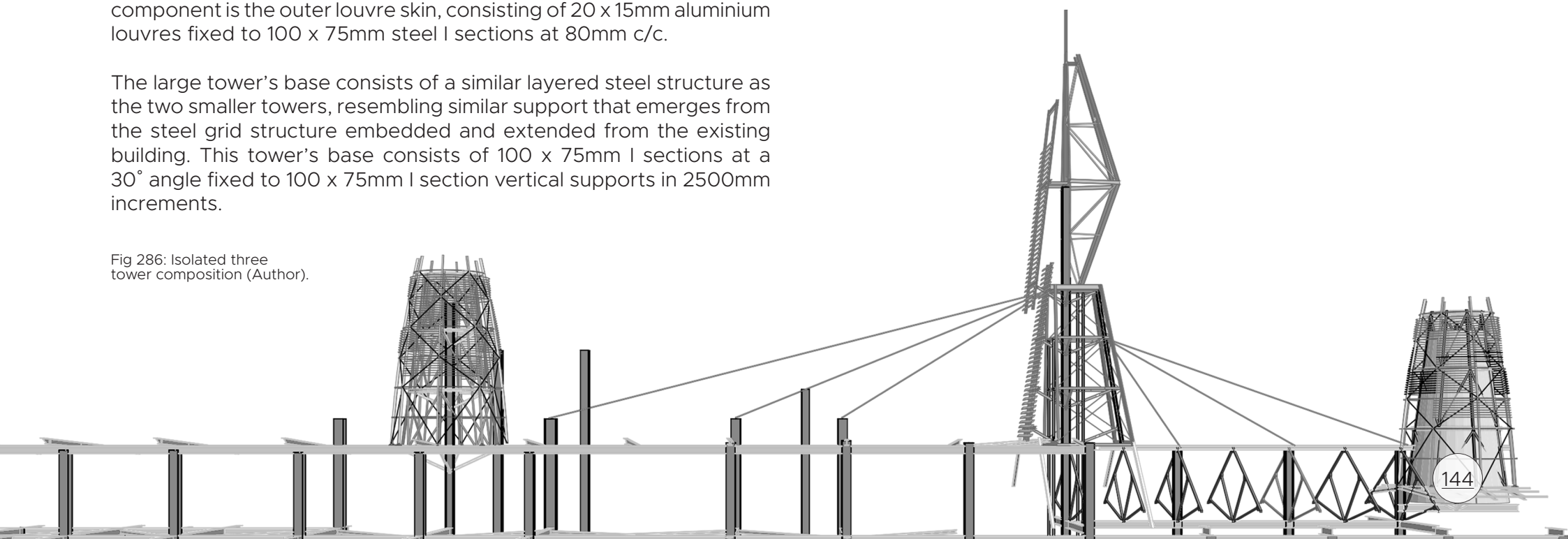
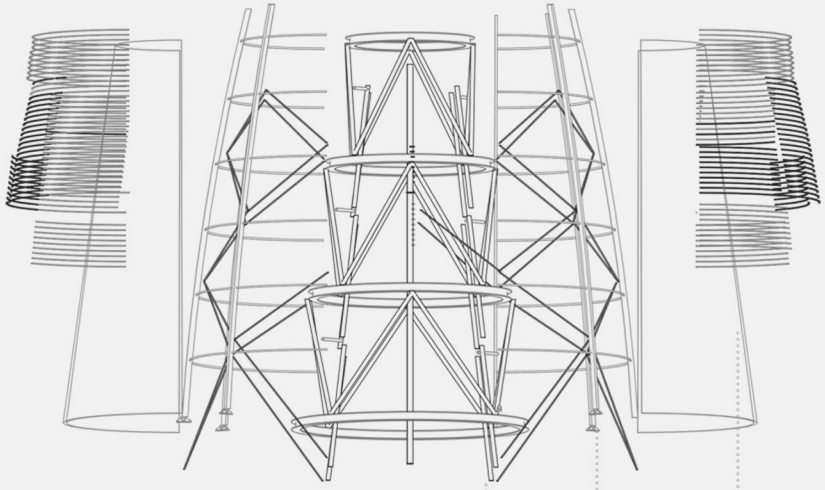
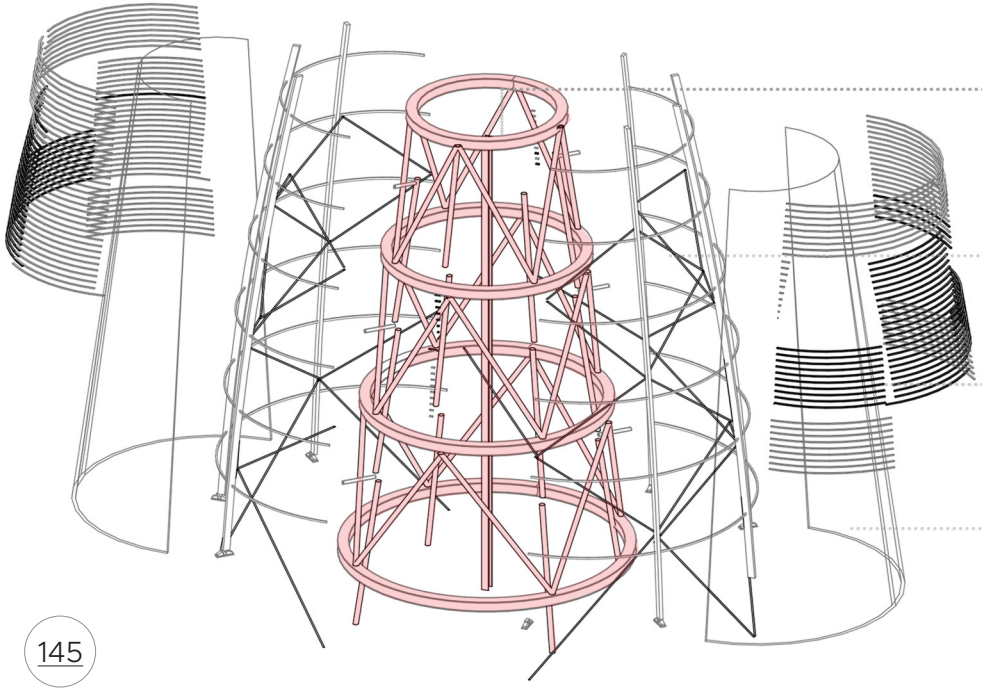


Fig 286: Isolated three tower composition (Author).

The louvre system consists of a primary support structure of 100x75mm steel I sections fixed to the main steel frame with 100 x 75 mm steel I sections that accommodate the 120 x 120mm aluminium hollow fin profiles at 200mm c/c. The central tower yields to the existing brick tower in height, with its highest vertical component at 33m and its highest horizontal element at 31m above the ground floor level. The existing brick tower's highest vertical point is situated 37m above the ground floor level. The three towers are mainly supported by vertical steel elements from the existing embedded steel structure and the newly added vertical extensions to the original steel structure. Steel beams connecting the steel grid structure further aid in support of the towers. The nature of the steel grid, or column and beam system, will be explored in the next section.

Fig 287 & 288: Smaller towers' layered materiality & composition (Author). + Next page
Fig 289-290: Top: Exploded view of large tower, Bottom: Section view of large tower (Author)





PRIMARY STRUCTURE

100x75mm I SECTION AT 60° ANGLE FIXED TO 100x75mm I SECTION VERTICAL SUPPORT IN 2500mm INCREMENTS

100x75mm I SECTION AT 25° ANGLE FIXED TO 100x75mm I SECTION VERTICAL SUPPORT IN 2500mm INCREMENTS

SECONDARY STRUCTURE

25mm DIAMETER GALVANISED STEEL TENSION CABLE FIXED WITHIN THE SECONDARY STRUCTURE

100x75mm STEEL I SECTION

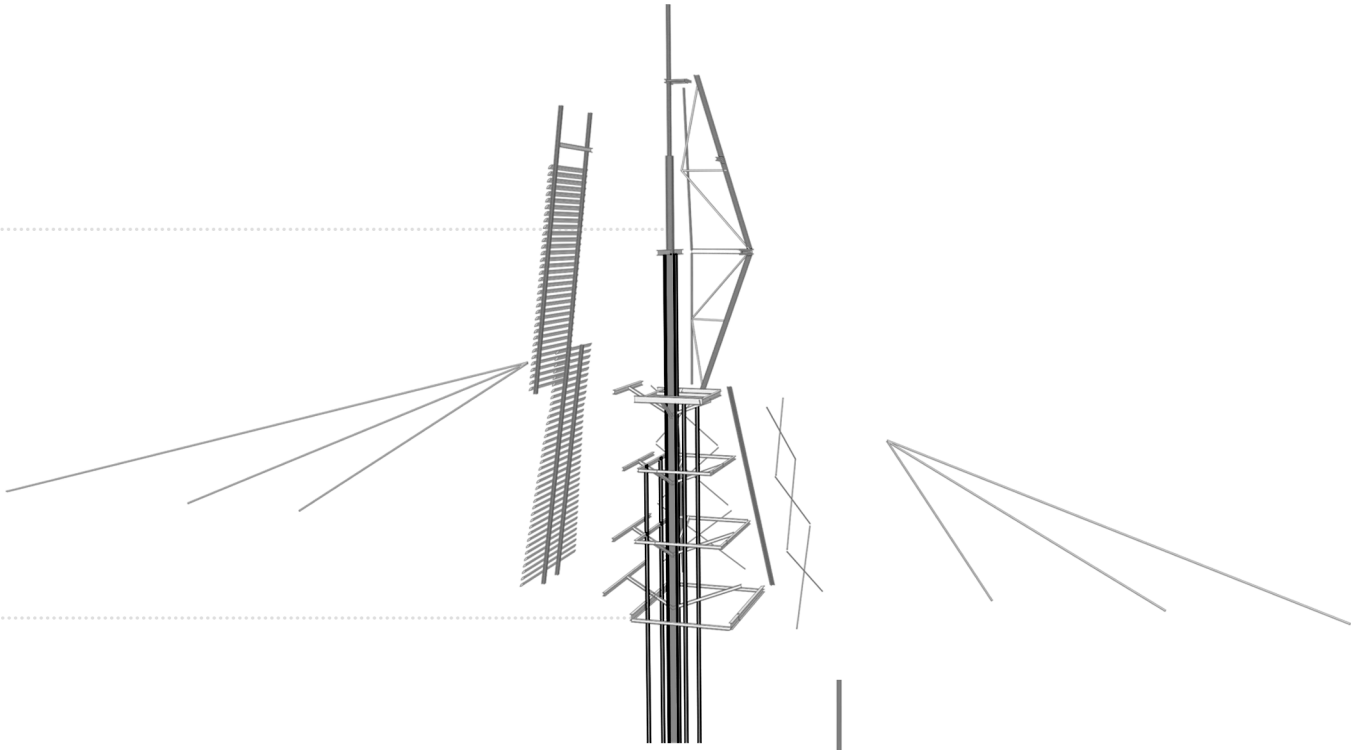
OUTER SKIN - LOUVRES

20x15mm ALUMINIUM LOUVRES FIXED TO 100x75mmSTEEL I SECTION AT 80mm c/c

OUTER SKIN

SECONDARY STRUCTURE

PRIMARY STRUCTURE



SECONDARY STRUCTURE

150x100mm STEEL I BEAM

150 x 100mm STEEL I SECTIONS AND 50 x 75mm GALVANISED LIGHTWEIGHT STEEL C PROFILES

100x75mm STEEL I SECTIONS FIXED TO MAIN STEEL FRAME WITH 100 x 75 mm STEEL I SECTIONS THAT FOR 120 x 120mm ALUMINIUM HOLLOW FIN PROFILES At 200mm C/C

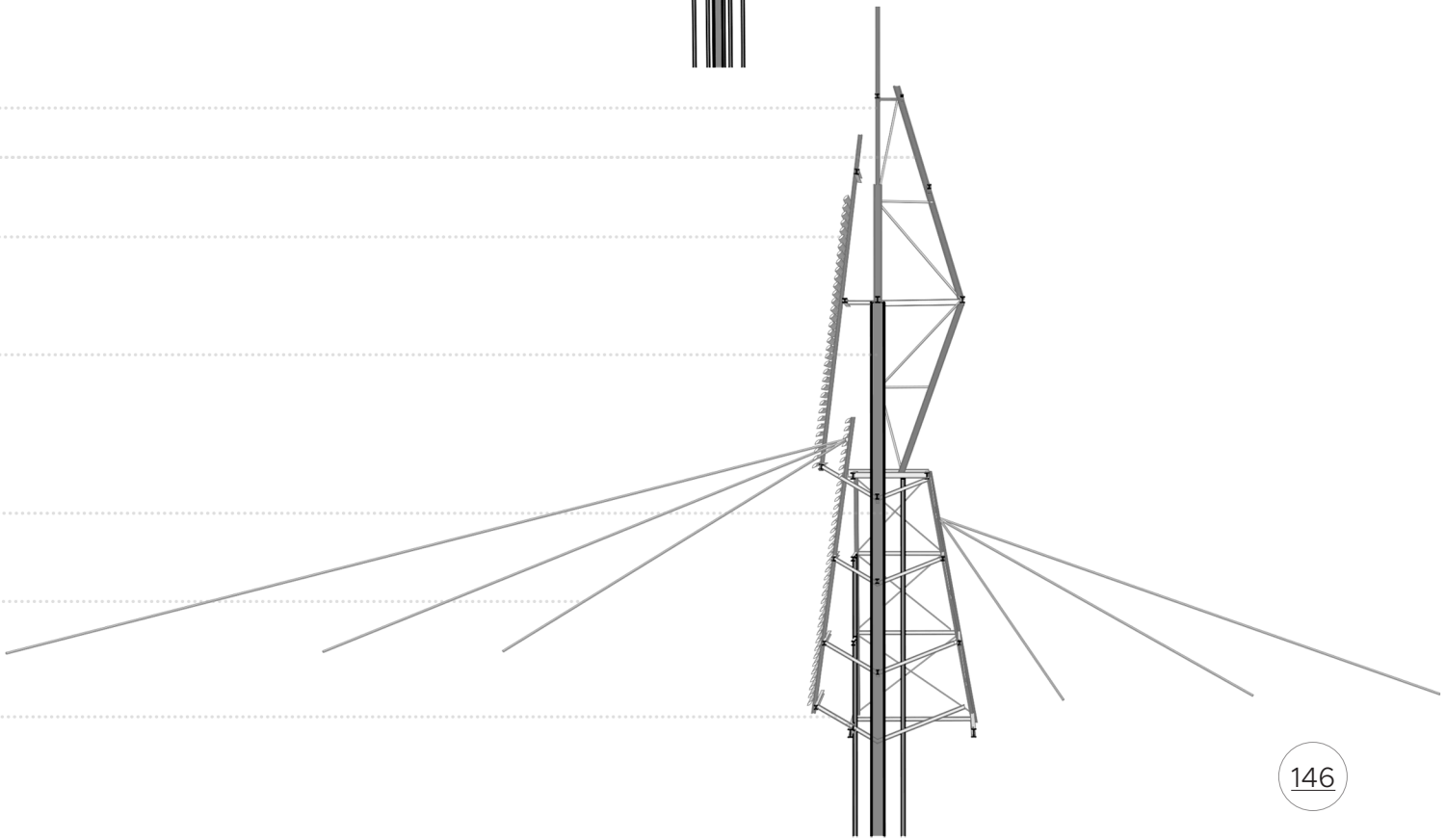
350x250mm STEEL H BEAM

PRIMARY STRUCTURE

20mm DIAMETER STEEL ROD CROSS BRACING FOR 150x100mm STEEL I SECTION FRAME

20mm DIAMETER TENSION CABLE FOR ADDITIONAL SUPPORT TO LIGHTWEIGHT STEEL TRUSS ROOF OVER MAIN ATRIUM SPACE

100 x 75mm I SECTIONS AT A 30° ANGLE FIXED TO 100 x 75mm I SECTION VERTICAL SUPPORTS IN 2500mm INCREMENTS

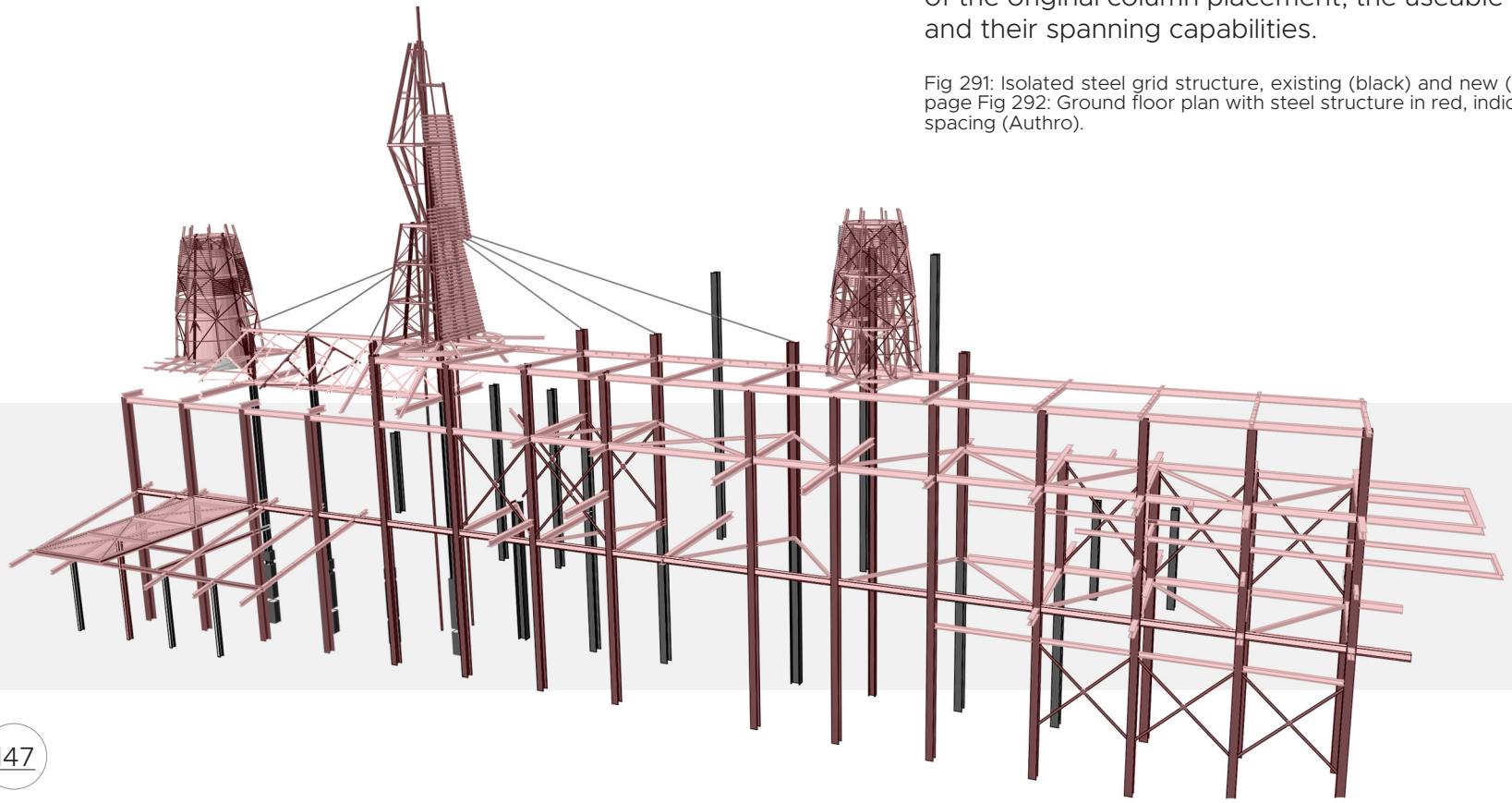


7.4.3 Steel Grid Structure:

The embedded steel structure proved to be challenging to understand at first. Limited information regarding the existing structure was difficult to obtain; however, sufficient information was gathered to conclude the following attributes. The embedded steel structure consists of riveted cast iron steel columns and beams that support the overhead floor system that consists of an I-beam system, concrete, and tension chords. The existing columns are scattered within the composition of the existing building, placed according to the supporting requirements of the secondary beam that comprises part of the overhead flooring system. Therefore, the layout of the original steel column grid presented as haphazard. These columns were identified according to their organisational importance, designating the most influential columns on the new layout to be the columns within the atrium. These columns are spaced at 4700mm c/c on a grid-like configuration, where all other existing columns are placed according to their needed support for the secondary beams.

Therefore, considering these columns, one can develop a layout for the prosthetic extension. The additional columns are spaced according to the existing columns as far as possible, slightly varying in centre spacing towards the west of the building. A grid has been created that includes primary and secondary spacing. The primary spacing between the existing and added columns is 5425mm, whereas the secondary spacing varies from 4200mm to 4800mm. The variation in spatial configuration is due to the haphazard nature of the original column placement, the useable construction methods, and their spanning capabilities.

Fig 291: Isolated steel grid structure, existing (black) and new (red) structure (Author). + New page Fig 292: Ground floor plan with steel structure in red, indicating the primary & secondary spacing (Authro).



7.5 Additional characteristics:

Other aspects of the design scheme that relates to the similar subsections and distinctions made within the analysis of a structural precedent at the beginning of this section, will be explicated. This subsection will focus on the technical aspects regarding practicality and feasibility that make up essential components of the design intervention. The subsections to follow are program and functions, massing, services regarding circulation and universal access and the handling of drainage and waste management.

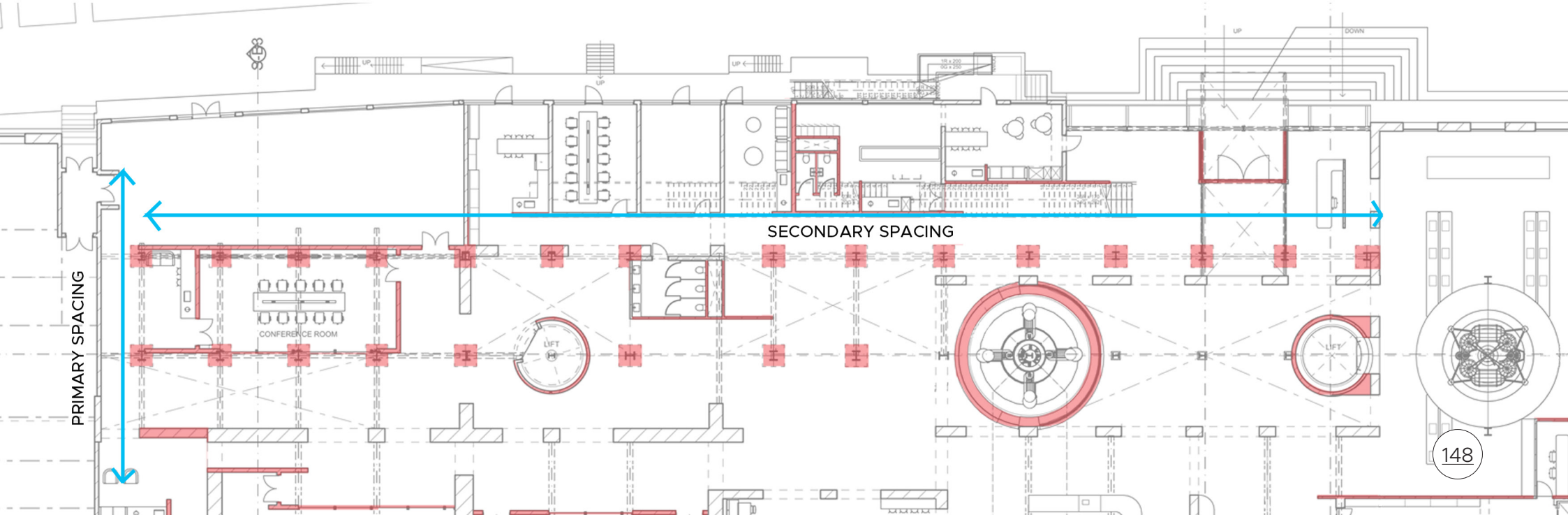
7.5.1 Programs and functions:

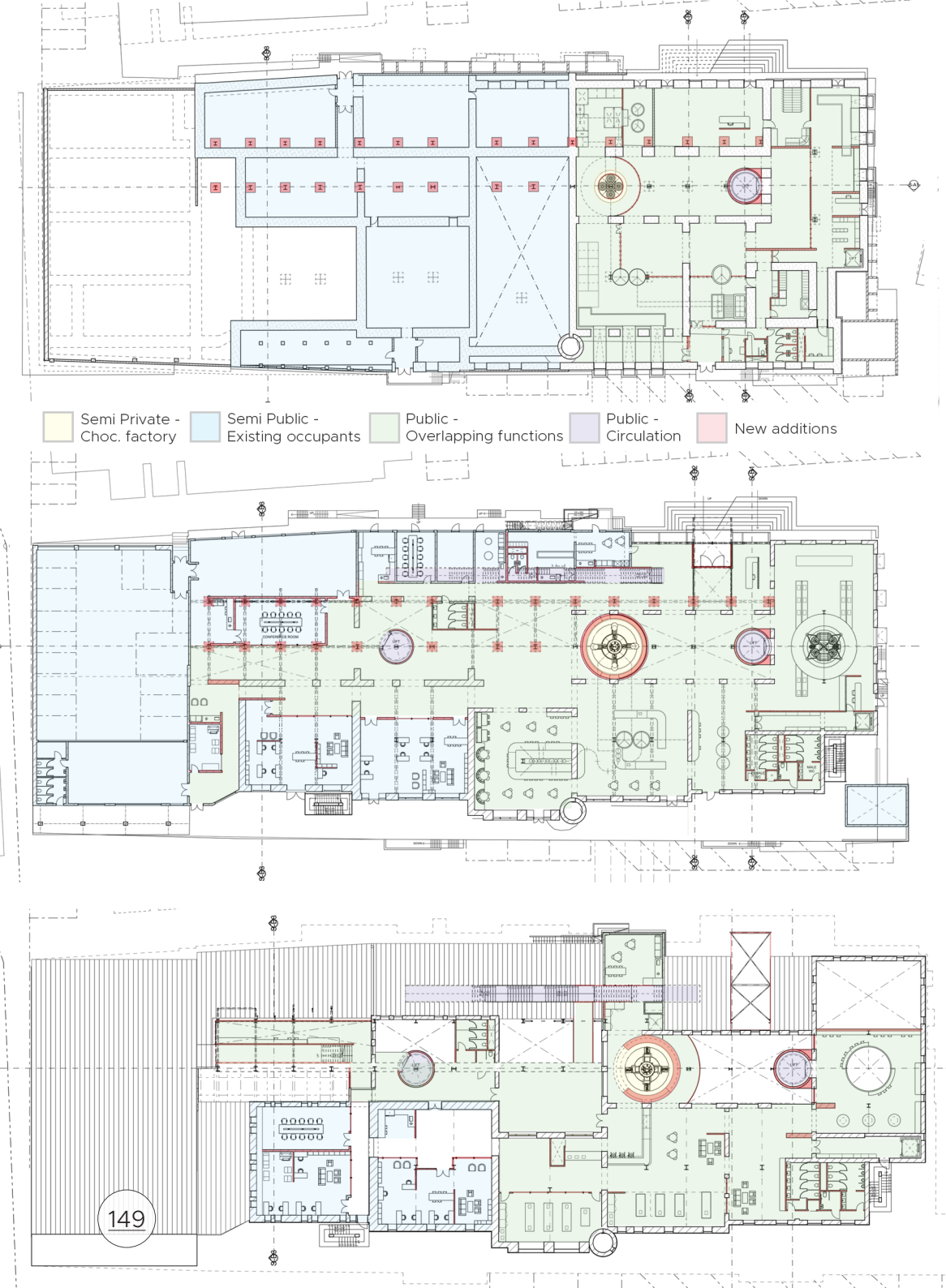
The functions incorporated into the existing and the prosthetic addition are organised according to their public or private requirements. However, the 'types' of functions share an overlap that aims to integrate several spaces to encourage engagement and interaction.

The placement of functional spaces intended to initiate a greater connection between the existing occupants of the Old Castle Brewery and its new employee and visitor counterparts. Various functions that share space can create a multifunctional hub that provides ample space for public, semi-private and private functioning and interaction. Fig 279-281 showcases various floors' allocated function 'types' within the structure. Colour coding the spaces according to their interaction type and program function.

7.5.2 Massing:

The massing of the existing red brick materiality of the Old Castle Brewery is dramatic and heavy. Noticeably so, as derived from the Table Mountain stone base and thick English bond red brick arched and straight walls. As previously mentioned, a portion of the original massing was identified as culturally and historically significant.





Thereby emphasising its composition, layout, and functional abilities. However, as it was also previously established, the exterior proved more significant for preservation than the interior, allowing the opportunity to remove or alter some of the interior massing, to create connection points, overlapping space and the incorporation of other functions contrasting to its original use. The massing is made to be more flexible yet still honouring the original intent of the layout. Openings are created in the interior massing, allowing more circulation, engagement, and interaction through the previous grid-box composition.

7.5.3 Circulation & Universal access:

Typically, universal access and circulation go hand in hand, as a building cannot be deemed universally accessible without the necessary circulatory measures. In the existing building, universal access is limited or disregarded. A few sloped access points were later added to the existing massing to allow access to the basement and the ground floor levels. Apart from a goods elevator, there were no other measures of providing universal access within the existing building fabrics. Therefore, this scheme aimed to include the aspects of essential circulation that were previously lacking. For illustrative purposes, the plan has been divided into thirds. Public access elevators were added to the two external thirds to provide access to the furthest points of the existing building and its prosthetic extension. Initially, only one elevator was added to the third furthest right. However, it did not prove successful. The two circulation shafts demonstrate ample circulation to the furthest points of the scheme while also serving the middle third. The middle third consists of the vertically stacked chocolate factory and surrounding essential functions that do not necessarily require circulation but encourage spectating.

Fig 293 -295: Basement to first floor with allocated functional spaces, refer to the top image for a legend (Author).

In addition to public and private circulation opportunities, there are multiple circulation opportunities as fire escapes. Consider fig 282, which identifies the two main existing fire stairs situated at the southern façade of the existing. The northern side also includes a fire escape, although it has limited access from the interior spaces. The prosthetic addition further required the possibility of adding a fire escape. Therefore, an external staircase attaches to the prosthetic addition or the chocolate spa's reception, offering an accessible escape from the addition to the main entrance on the ground floor and another circulation route on the northern side of the building.

7.5.4 Drainage:

Where possible, all drainage and waste management aspects connect to the existing municipal sewer and wastewater lines. As far as possible, ventilation and drainage ducts have been incorporated into the existing space to utilise the existing drainage capabilities and infrastructure. Consider fig 282; existing drainage infrastructure and ducts are indicated, along with adding new drainage lines, plumbing fixtures and connections to the existing. Within the prosthetic addition, the chocolate spa requires a service line and drainage pipes to supply and remove water. The necessary pipes are fitted into the steel structure, traversing from higher levels to the ground floor, where the lines are connected to existing drainage infrastructure.

The indicated duct spaces are vertically stacked across all levels to minimise the spread of pipes and plumbing fixtures between floors. In some instances where ducts are not accessible, existing drainage features to the exterior of the existing building have been utilised. The existing infrastructure is used as far as possible without drastic intervention, as these fixtures are already connected to the municipal lines traversing the site.

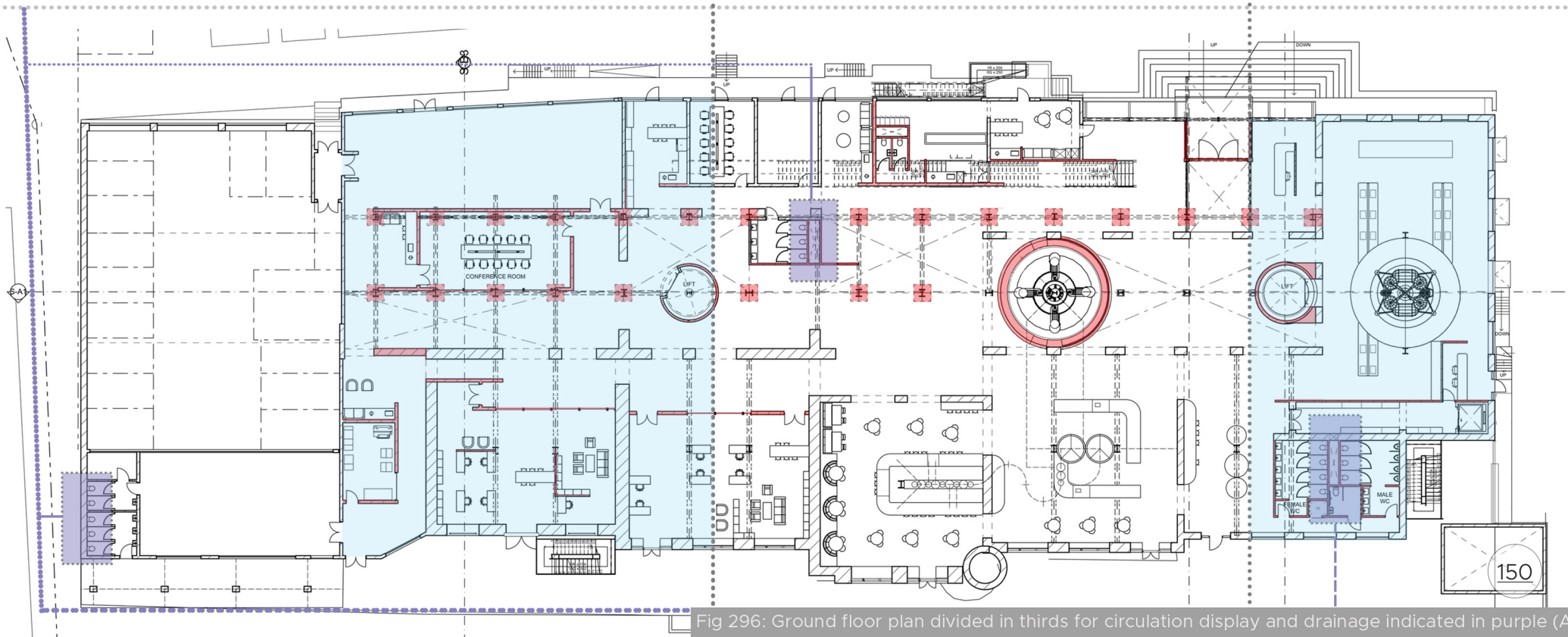


Fig 296: Ground floor plan divided in thirds for circulation display and drainage indicated in purple (Author).

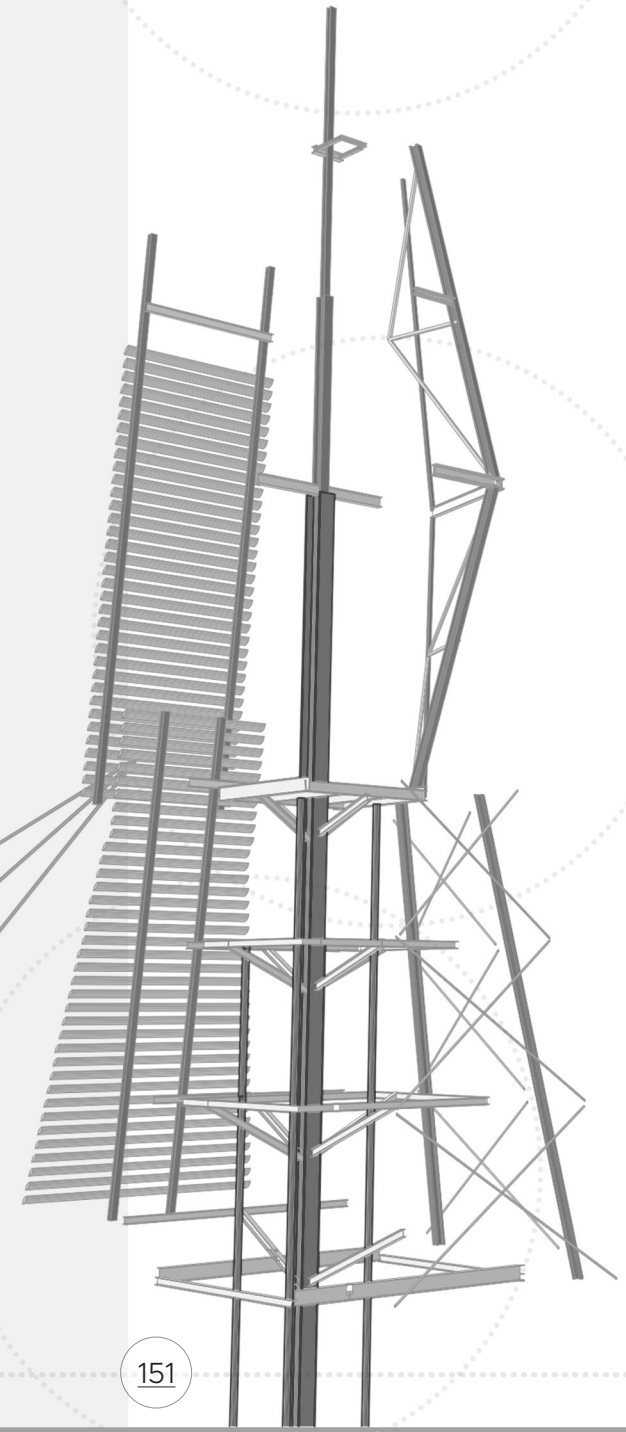


Fig 297: Exploded view of the central tower (Author).

7.6 Design Synthesis:

The technical section focuses on implementing structural principles and their consequences by investigating prominent structural features that make up the design scheme. These features incorporate attributes, lessons and principles derived from various precedent studies, the development of a theoretical stance and numerous conceptual explorations. This section aims to clarify the coming together of all these aspects that have generated a design proposal and technical resolution by implementing and combining the agglomerate of influences.

The ethical reuse of a historic building within the industrial periphery of Woodstock draws on the narrative of an Epicurean-influenced approach. That considers the ethical and aesthetical properties of the existing and the consequences thereof when introducing a new identity to an existing complex. The Old Castle Brewery forms part of the urban environment, standing as a historic beacon on the edge of Woodstock. Any possible change to the existing would either be very limited or quite radical. Minimally invasive adaptive reuse strategies offer unrestricted historic preservation, but it leaves no room for future identity development that encompasses the changing times. ‘Future anterior’ provided a solution. A concept that focuses on the factual notion that time does not stand still. Moreover, buildings should not remain frozen in a milieu but should evolve as the urban environment, context, and societal identity shift. Therefore, changes to the existing historic building should be drastic to illustrate the radical evolution of identity in a contemporary urban setting, where a once mid-town beacon has become a peripheral complex. The introduction of drastically contrasting materials to the existing English bond red brick clarifies any speculation about incorporating a new identity. It should not be puzzling to distinguish whether the existing has been altered.

The design incorporates the considerations of ethical indulgence with radical urban renewal within the framework of an Epicurean approach. In other words, the design utilised the guidelines of The Burra Charter to establish key historical features. It then implemented a steel grid structure to become an extension of the existing while not imposing on identified significant characteristics. The materiality drastically contrasts the existing brickwork, indicating the evolution of building identity and radically changing the urban impression of the building within its context. The embedded steel structure, now extended with contemporary additions, emerges from the existing brickwork to showcase the underlying diversity of materials.

The historic building already contains allure. As an island within the industrial periphery, with the characteristics of a Victorian castle, one cannot help to wonder what the building accommodates within. The incorporation of a chocolate factory builds on the allure of indulgence, to see the complex as a pleasure island to be explored and enjoyed. By removing the danger and fear

of retribution for overindulgence, a visitor can enjoy the features and functions of indulgent chocolate making. The design allows visitors to immerse themselves in the process of chocolate making while enjoying the engagement and interaction it offers.

A large-volume atrium welcomes a visitor into the world of chocolate indulgence, immediately showcasing a vertically stacked chocolate factory accentuated on the exterior by an additional beacon of lightweight steel. Overlapping functions invite visitors to engage and indulge in the pleasures and variety of options in chocolate making and the experience thereof. The introduction of a chocolate spa furthers ethical indulgence. Not only allowing visitors more pleasure to be indulged in but reusing waste and by-products of the chocolate-making process to be considerate towards the environmental and ethical impact of chocolate making. The design aims to follow ethical considerations as far as it can. The steel grid is configured around the existing layout and features of the Old Castle Brewery building. Preserving the historic building and adding a prosthetic addition over more recent built structures. The design accentuates the importance of the existing, aiming always to create a visual connection from the prosthetic addition to the existing building. The prosthetic addition connects to the existing via a parasitic-influenced relationship, infiltrating the existing and 'latching' on in as many places as possible.

The prosthetic places itself within the existing while extending to the exterior, establishing an experience through the extension of place. As previously mentioned, the prosthetic not only extends place but creates an experience through its joints and connection possibilities. By crafting various joints to articulate the connection between old and new, the design shows respect towards the existing and cultivation towards the prosthetic. The joints showcase the exact moment of transition and extension, respecting the existing building, its materiality and character, only allowing extension after the accentuation of the original building intent.

The design radically changes the existing urban impression, shifting the complex's urban character from a historical position to an evolving identity within a contemporary milieu. Disregarding the intent of a physical bridging between the site and the large extent of Woodstock, as previously explored in chapter 2. Instead, focus on a poetic and mental reintegration into the surrounding neighbourhood through the allure of chocolate-making and indulgence. The design aims to utilise the insights embedded in a prosthetic architectural approach to inspire the adaptive reuse of a historic building in Woodstock, Cape Town, and reconnect the isolated site to the larger creative and diverse urban environment while preserving the contextual meaning of the historic building.





Fig 298: Parasitic prosthetic exploration with existing (Author).

Conclusion

After establishing ethical indulgence as the discipline of principles and values applied or implemented when satisfying inclinations or yielding to desire, it became clear that by placing indulgence and ethics into a relationship, one can create a framework to edify gratification and indulge without the fear of retribution. By implementing ethical indulgence, as an Epicurean approach, the 'pleasure island' typology is reinvented to allow the ethical indulgence of the 'fruits of the island'.

David Konstan, a professor of Classics and Comparative Literature, writes about Epicurus and his musings about life, ethics, and the Epicurean life, stating that:

> *The elimination of the fears and corresponding desires would leave people free to pursue the pleasures, both physical and mental, to which they are naturally drawn and to enjoy the peace of mind that is consequent upon their regularly expected and achieved satisfaction (Konstan, 2022: online).*

The elimination of fear paves the way for applied ethical indulgence to allow individuals to be allured by the propensity of indulgence and enjoy the physical and mental pleasures an inner city chocolateria offers. The enjoyment of chocolate decadence without the threat of intemperance reverts the notion of indulgence to an experience that can be considered kindness, rendering cacao-*poiesis* as kindness in delightful indulgence.

An ethically indulgent approach further dictates the methods of architectural application to The Old Castle Brewery in Woodstock. As explored in terms of the various relationship types between the host and prostheses, a prosthetic architectural approach coincides with an ethically indulgent approach to adaptive reuse. That extends the existing to promote functional use, a collaborative atmosphere and an interactive chocolateria while preserving the contextual meaning of the historic building. Through prosthetic additions, the approach to adaptive reuse provides the opportunity for ethical yet radical urban renewal. That conserves the historical by identifying its most culturally and historically significant aspects. At the same time, extending the existing by applying the insights of venturesome architectural prosthetics to transform the prevailing building character to evolve with its milieu and to reconnect the isolated site to the larger creative and diverse urban environment.

Ultimately, the intent of an Epicurean, ethically indulgent, and venturesome architectural prosthetic endeavour is guided by the allure of chocolate. Indulgence remains synonymous with chocolate, insinuating moral hedonism yet sparking wonder, imagination, and fantasy. Further driven by the unconventional conception of chocolate factories set out by Willy Wonka to indulge in the splendour of chocolate-making, its fantastical possibilities, and the recognition of imagination as one's only limitation. Thereby, one can only state one more thing: "*Welcome, my little friends. Welcome to my chocolate factory" (Dahl, 1964: 71).*

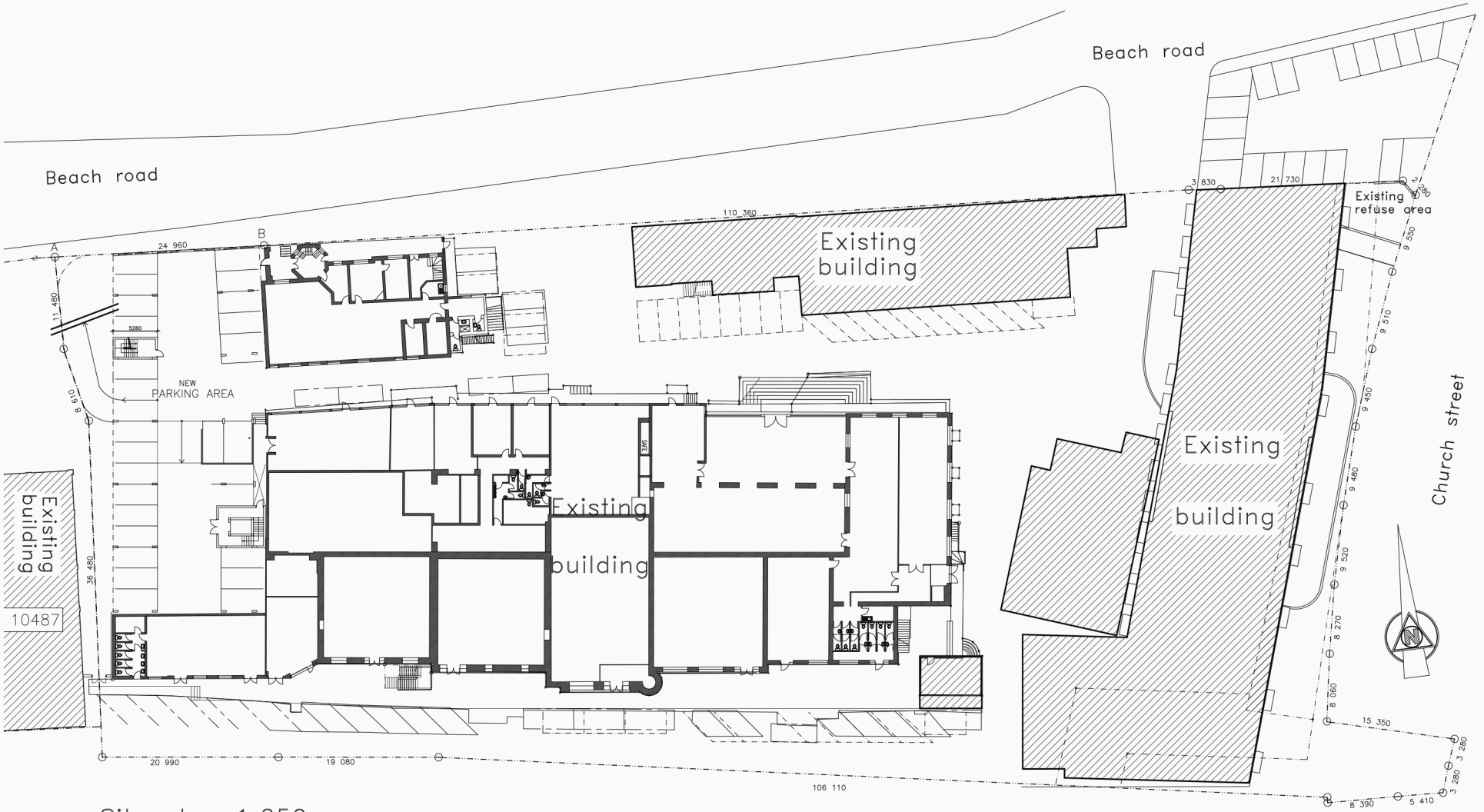
Reflection

As mentioned in the preface, the research for this project was inspired by the fantastical world of Willy Wonka. The 2005 film adaptation, *Charlie, and the Chocolate Factory*, directed by Tim Burton, was one of my favourite films growing up. Never would I have imagined that this film would inspire me to delve deeper into the world of chocolate and indulgence to design a chocolate factory, never mind an inner-city chocolateria, in a historic building in Cape Town.

The world of Willy Wonka encompasses a wide variety of possible theoretical aspects. As the project progressed, it became clear that ethics would have to play a more significant role in developing a chocolate factory in a culturally and historically significant building, such as The Old Castle Brewery. It would have been impractical to attempt an adaptive reuse approach without the influence of ethics and indulgence to guide a sensitive yet radical approach to urban renewal. Furthermore, the complex nature of an ethically indulgent adaptive reuse approach guided the design towards an extension of the existing rather than replacing what is lost.

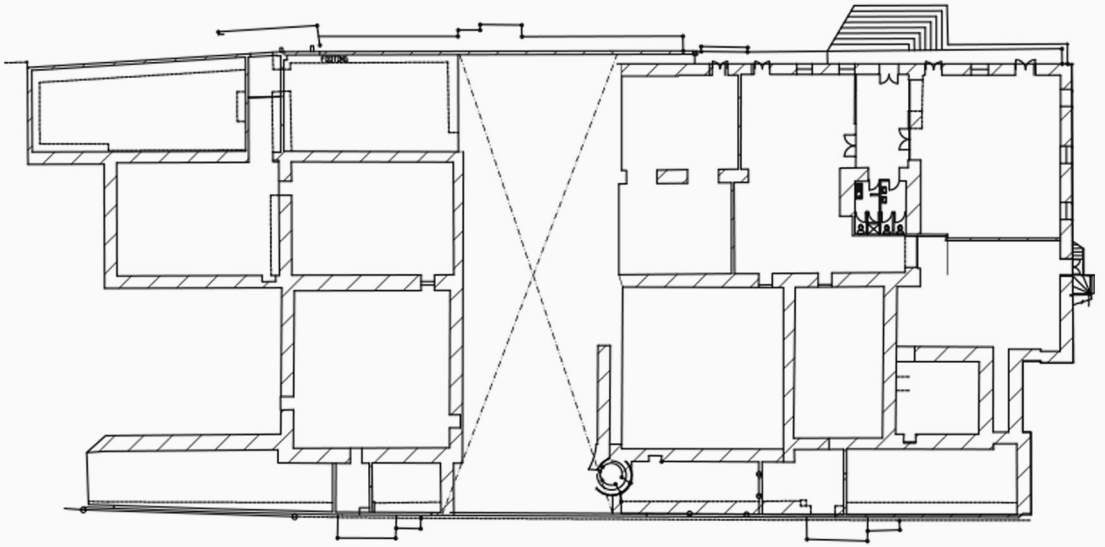
Prosthetic architecture served this project from its conceptual phase. It was, initially, the base for development and the original component that set the final design into motion. Unlike medical prostheses, architectural prosthetic ventures are limitless and not bound by mimicry. This revelation acknowledged the inexhaustible nature of Willy Wonka and his ideas, inspiring the introduction of a chocolate factory in a castle-like red brick building that stands within the industrial periphery of Woodstock.

This project was a lesson in the process of research, design, and reflection. A project that encourages different methods of thinking, decision-making and practical application allowed me to indulge my chocolate infatuation with the guidance of the king of indulgence, Willy Wonka, to create an intervention that challenged and inspired me simultaneously. The project lured me in with chocolate and the promise of indulging in the fantasy, imagination and pleasures set out by Wonka. Delivering on its promise and providing me with a newfound appreciation for the art of cacao-*poiesis*, the fantastical world of *Charlie and the Chocolate Factory* and the preservation of historic buildings such as the Old Castle Brewery in Woodstock, Cape Town.

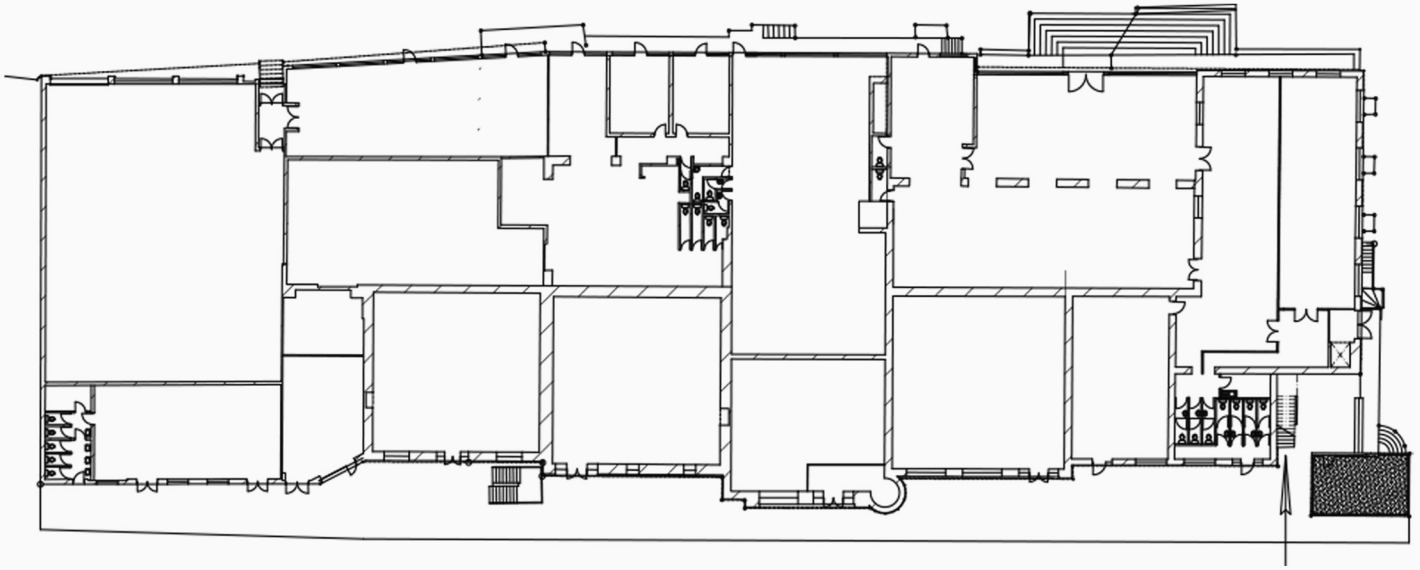


Site plan 1:250

Fig 299: Existing ground floor (Heritage Western Cape, 2022: online).

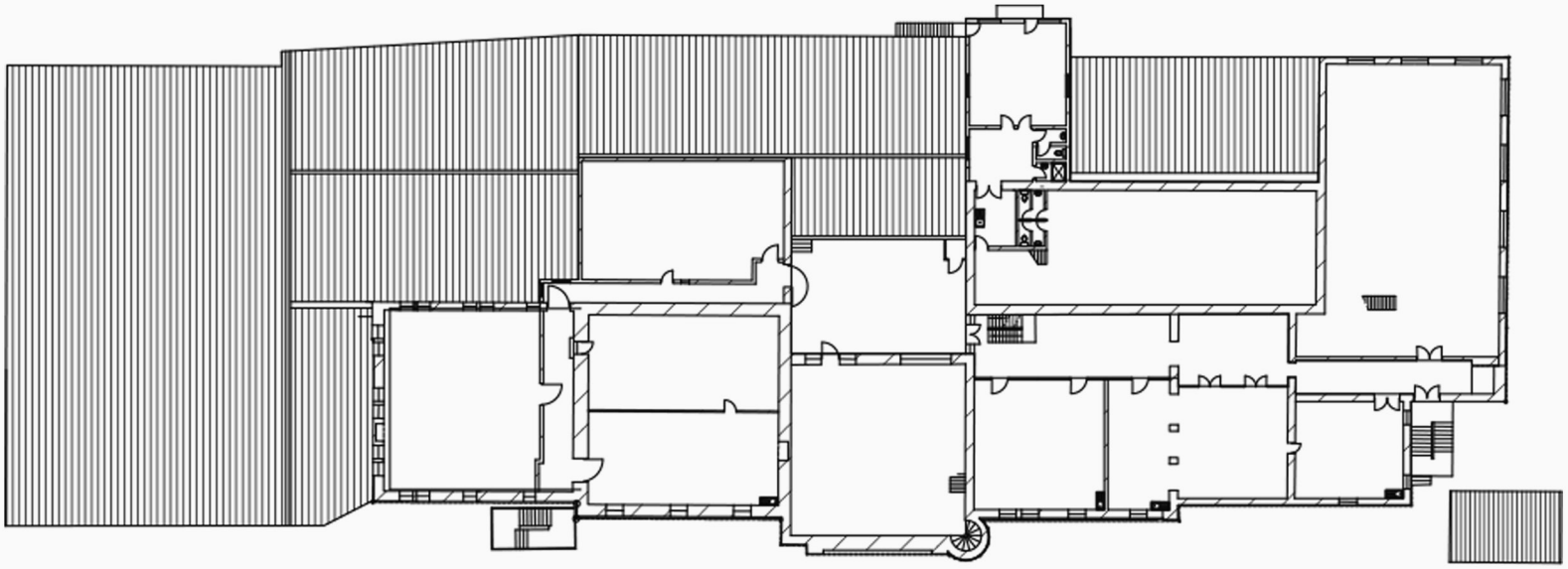


BASEMENT LEVEL

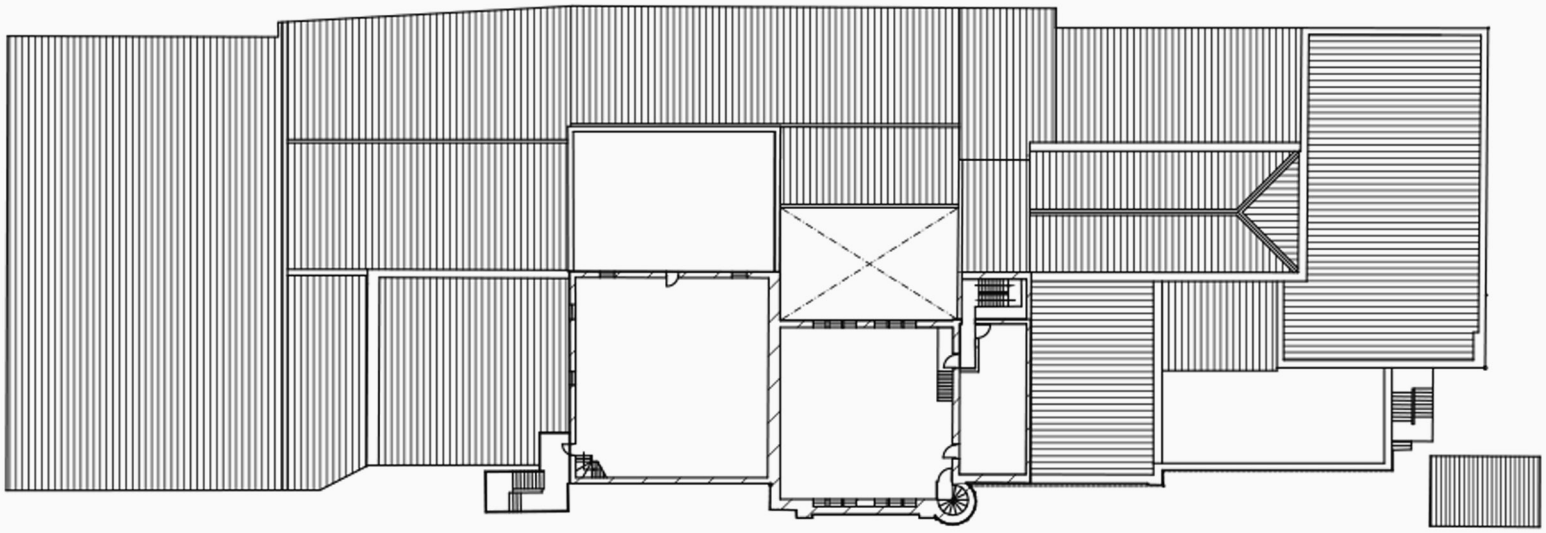


GROUND FLOOR LEVEL

Fig 300: Existing basement & ground floor (Heritage Western Cape, 2022: online).



FIRST FLOOR LEVEL



SECOND & THIRD FLOOR LEVEL

Fig 301: Existing first & second, third floor (Heritage Western Cape, 2022: online).

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